NEW ALOHA STADIUM ENTERTAINMENT DISTRICT

PROGRAMMATIC DRAFT ENVIRONMENTAL IMPACT STATEMENT

DECEMBER 2020

PREPARED FOR:

STATE OF HAWAII

DEPARTMENT OF ACCOUNTING AND GENERAL SERVICES

WILSON OKAMOTO CORPORATION | CRAWFORD ARCHITECTS

Appendix A-1:

NASED Programmatic Master Plan

Draft December 16, 2020

New Aloha Stadium Entertainment District

PROGRAMMATIC MASTER PLAN

Ha aheo ka inoa a o Ewa
i ka I a o Ka Hāmau Leo
Ka pueo kia i o Hālawa
ālawa kona maka iā Aiea
Kilihea i ke ala o uka
ia uka ho i o Kalauao
Alahao hele o Makalapua
hi ikua ma na wai ekolu
Holunape a ka lau i Mānana
kūlana hiehie o na wai
Waiawa, Waipi o me Waikele
Lauele ka mana o aloha
O Pōhakupili mai Hō ae ae
kānaenae Kāne me Kanaloa
O Kalaeloa ma Honouliuli
Nou nō e Ka ahupāhau
Kaulana ke awalau a o Pu uloa
Eō Māmala hao a pā ihi i ko lā nui e
No ka lā hanohano, Ka lā nani kamaha o
No Ka lā ma ama ama ho okōlli ai ka hae pa a lima
Ka hae pono 1 o ku u āina aloha e
Aloha e ka pūkani o nā pū ali koa
Nā hoa aloha āina onipa a a ho okūpa a
I pa a hou mai ke kū oko a a o Hawai i
No Hawai i āina maluhia o Kamaka eha
No Lili uokalani la ke aloha
E onipa a, e pa a mau i ke aloha e

Proud is the name of Ewa
Fertile land where oysters once thrived
Behold the great guardian owl of Hālawa
Casting its gaze upon Aiea
Profuse is the fragrance of the uplands
These lands in the upper reaches of Kalauao
There is the distance is the path of the Makalapua
Traversing Waimalu, Waiau and Waimano
The lilting of the coconut fronds at Manana
Bearing witness to more fertile, verdant lands
Waiawa, Waipi o and Waikele
A myriad of memories of the glorious days old
There is Pōhakupili, the journey is from Hō ae ae
Appease the ancient names of honor, Kāne and Kanaloa the awa drinkers
Trailing out to Kalaeloa upon the lands of Honouliuli
For you we utter your name, Ka ahupāhau benevolent grandmother guardian
Famed are the waterways of Pu uloa
Harken oh Bay of Māmala resplendent in the sun
For such glorious and magnificent day we shall behold
That brilliant day where we shall wave our beloved flag once more
The rightful flag of my homeland
Honor and respect the trumpet shell cry of our band of warriors
Our comrades in the fight to honor, love, cherish and protect our land
That we should once again secure the freedom and independence of Hawai i
For beloved Hawai i ever in the shelter of Kamaka eha
For our beloved queen Lili uokalani we call out
Remain steadfast always with love, honor, dignity and respect for this our legacy

Originally composed in 1996 for the Hawaiian language community class under Leeward Community College Ka Leo Kaiāulu program where I taught for several years around O ahu. This mele is now finally revived and revised on this 12th day of October 2020. It honors the late Queen Lili uokalani, mother of Hawai i and our land and people. We shall never forget, and we shall remain ever dedicated to the pursuit of justice, fairness, liberty and equity for our Kanaka in our homeland of beloved Hawai i.

Na u no,

Hinaleimoana K.K. Wong-Kalu

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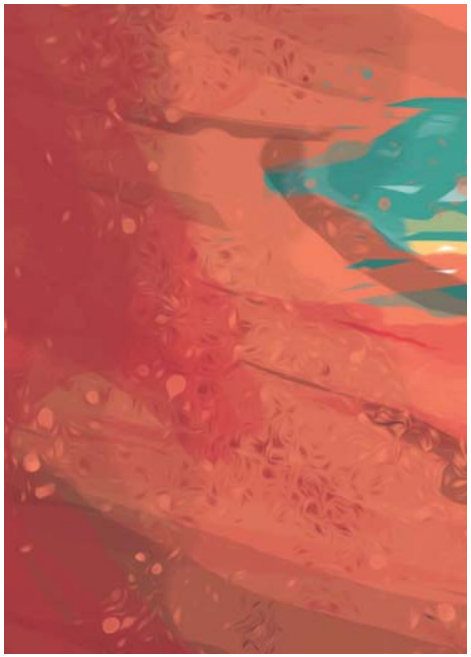


Appendices

Acronyms and Abbreviations

ACA Aiea Community Association
ADA Americans with Disabilities Act
CCH City and County of Honolulu
DAGS Department of Accounting and General Services
DOE Department Of Education
DPP Department of Public Planning
EIS Environmental Impact Statement
EISPN Environmental Impact Statement Preparation Notice
HAR Hawaii Administrative Rule
HART Honolulu Area Rapid Transit
HCDA Hawaii Community Development Authority
HDOT Hawaii Department Of Transportation
HPHA Hawaii Public Housing Authority
HRS Hawaii Revised Statues
JBPHH Joint Base Pearl Harbor-Hickam
NASED New Aloha Stadium Entertainment District
OEQC Office of Environmental and Quality Control
P3 Public Private Partnership
PMP Programmatic Master Plan
TMK Tax Map Key
TOD Transit-Oriented Development

Background

Artwork by John Prime

PREFACE

Acknowledgments

This Programmatic Master Plan reflects the hard work and dedication of a large group of community members, including elected officials, administrators, public servants, community leaders, business leaders, and members of the public who have long contributed to the Hālawa area. The project team is delighted to recognize the following people who contributed to this effort

- Senate President Ronald Kouchi
- Senator Glenn Wakai
- Senator Donna Kim
- Senator Donovan Dela Cruz
- Senator Gilbert Keith-Agaran
- The Late Senator Breene Harimoto
- Speaker of the House Scott Saiki
- Representative Sylvia Luke
- Representative Ty Cullen
- Representative Aaron Johanson
- Governor David Ige
- Lt. Governor Josh Green
- Council members
- Community Stakeholders
- Chace Shigemasa , Chair, on behalf of Neighborhood Board #18
- Bill Clark , Chair, on behalf of Neighborhood Board #20
- Claire Tamamoto , President, of the Aiea Community Association

Artwork by John Prime

Project Management

Department of Accounting and General Services (DAGS) Staff

Aloha Stadium Staff

Aloha Stadium Authority Board

Hawaii Community Development Authority (HCDA) Staff

New Aloha Stadium Entertainment District Consultant Team

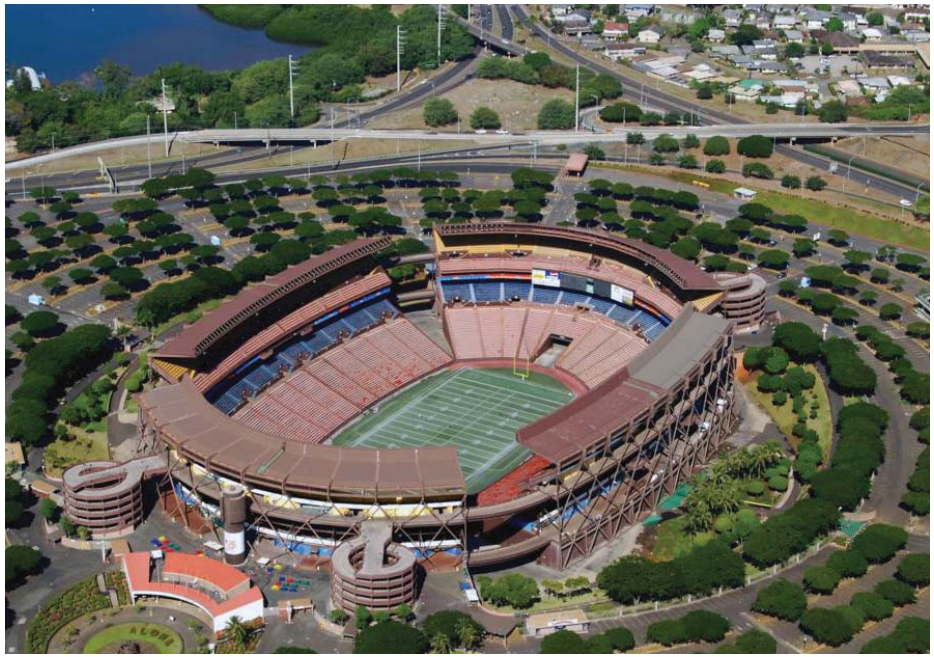
Crawford Architects is leading a multi-disciplinary team of consultants including:

- **WT Partnership**
  P3 Transaction Advisors /
  Project Delivery & Cost Estimating
- **Architects Hawai'i Limited**
  Local Architects
- **Wilson Okamoto**
  Environmental Impact Statement Preparation/
  Traffic & Site Infrastructure Studies
- **Honua Consulting**
  Community Outreach & Cultural Surveys
- **Aecos Inc**
  Botanical/Fauna Survey
- **Y. Ebisu & Associates**
  Noise Assessment
- **Cultural Surveys Hawai'i**
  Archaeology Survey
- **Control Point**
  Surveying
- **Geolabs, Inc**
  Geotechnical Survey
- **Victus/RCLCO**
  Market Analysis
- **CommPac**
  Public Relations & Community Outreach

Project Lead: **Stacey Jones,** Owner & Principal of Crawford Architects

Programmatic Master Plan Authorship Team

- **Crawford Architects**
  Master Plan Site Design & Project Management
- **Honua Consulting**
  Community Outreach & Cultural Surveys
- **Architects Hawai'i Limited**
  Master Plan Site Design & Architectural Guidelines



INTRODUCTION

Executive Summary

The New Aloha Stadium Entertainment District (NASED or District) is intended to create an exciting, vibrant mixed-use community situated on the Aloha Stadium parcel within the Hālawa Area Transit-Oriented Development boundaries. With the Hālawa Honolulu Area Rapid Transit (HART) station nearing completion and interim service between Kapolei and the Daniel K. Inouye Honolulu International Airport scheduled to begin in Spring 2021, this District is well poised to transfer the Hālawa area into a thriving community offering expanded recreation, job, and housing opportunities for the surrounding community and entire state.

The NASED project is intended to encompass the construction of a new stadium facility in addition to related mixed-use development that will serve to create the District on the grounds of the existing Aloha Stadium site in Hālawa. It is intended to be delivered through a number of construction phases and is intended to deliver a world class and community-centric mixed-use district, with an emphasis on developing diverse sustainable programs, tourism, and entertainment opportunities.

The construction of the new stadium facility and mixed-use development of the entertainment district surrounding the new stadium will be pursued under a series of agreements between the State and District Developer(s).

Precedent Information

Comprehensive Site Summary - Oct. 2014

Prepared by Foley and Lardner, LLP

This report compiled and summarized the results of numerous studies pertaining to the Aloha Stadium and its surrounding development. This information was assessed for the purposes of framing options for the potential redevelopment of the stadium and its site. In section 9.a, 'Summary Observations and Analysis', fiscal and operational comparisons were drawn between renovation and new construction options. This report also began to elaborate on the potential design constraints developers would have to address in future concepts.

2017 Hālawa Area TOD Report

Prepared by CallisonRTKL, Belt Collins Hawaii, Fehr & Peers, and Keyser Marston Associates.

The Hālawa Area Transit-Oriented Development (TOD) Plan presents a community vision for the neighborhoods surrounding the Aloha Stadium HART Station. The TOD introduces a proximity-based plan to transform the Hālawa area into a fully integrated mixed-use community. By creating a diverse and compact environment, the community is able to take full advantage of the benefits this transit connection presents - creating new economic growth opportunities through new development encompassing retail, commercial, housing, and visitor amenities. This creates a framework for growth and a guide for the full utilization of the P3 delivery model.

Aloha Stadium Conceptual Redevelopment Report - Feb. 2017

Prepared by Foley and Lardner, LLP, Victus Advisors, Populous, and Jones Lang Lasalle

This report posed an initial market study and economic impact analysis for mixed-use development options, followed by recommendations based on the legal and practical risks, challenges, and opportunities associated with proposed planning efforts.

The Conceptual Redevelopment Report serves to introduce and analyze potential funding sources, revenue streams, immediate recommendations, expense projections, programmatic land uses, phasing models, conceptual plans, preliminary site assessments and financial development models for future development.

Planning for a New Aloha Stadium and Site Redevelopment - Feb. 2019

Prepared by Crawford Architects, CallisonRTKL, AHL, and WT Partnership

At the request of the State of Hawaii Department of Accounting and General Services (DAGS), a site study was conducted to analyze the relative merits and drawbacks of the current Hālawa site against a range of alternative site options. Comparison metrics for the various sites included site access, transit connections, regional demographic and development opportunities, and incentives.

Of the sites that were assessed, the current Hālawa Site rated the highest in all categories. This site is the most equipped for development, with a majority of the desired amenities already in place.

Market Feasibility Studies & Economic Impact Analysis for a New Aloha Stadium & Ancillary Development District - Oct. 2019

The 2019 Victus / RCLCO Market Feasibility Studies & Economic Impact Analysis provided the programmatic quantities of economically sustainable development. These programmatic quantities formulate the backbone of the Programmatic Environmental Impact Statement (PEIS) and this PMP document.

Initial Concepts (A, B and C)

Crawford Architects and WT Partnership, along with AHL, developed three potential options/site layouts for District Developer(s) to consider. Each option envisioned the new stadium in a different location within the District. These three options were additionally shared extensively with the community and stakeholders to solicit critical feedback that should help to further the progress towards a final master plan (to be developed by the District Developer(s)) and design.

Input from our Client: DAGS and the Stadium Authority

The Client Group, consisting of representatives from DAGS and the Stadium Authority, were requested to respond to a series of preliminary questions and prompts regarding the nature and goals of the project. This information was later used in evaluating potential sites and development concepts.

Input from the Community

The project team maintains an expectation of transparency with the community, and has regularly attended community board meetings to inform the public of project updates and events. Through the facilitation of community design workshops and presentations, members of the public and stakeholders have been provided key opportunities to add input and express their needs and concerns. The documentation of this input will be continuously used to guide major design decisions throughout the development of NASED. More detailed information about these meetings and their outcomes can be found in the sub-section labeled 'Public Design Process.'

Input from Stakeholders

A comprehensive list of over 150 stadium vendors, users, licensees, and neighboring businesses were invited to engage with the project team in a larger community workshop. This workshop, led by Crawford Architects, allowed key stakeholders to provide input and assessment of the conceptual options available. The documentation of this input will be continuously used to guide major design decisions throughout the development of NASED. More detailed information about this meeting can be found in the sub-section labeled 'Outcome of the Master Plan Community Workshop for Stadium Vendors, Licensees, Users, and Area Businesses' beginning on page 51.

Implementing the Hālawa Area Transit Oriented Development Plan

The goal of this NASED PMP is to build upon the community vision presented in the Hālawa Area TOD Plan and focus on guidelines for implementing that TOD Plan within the District. Informed by current economic and market conditions for the Aloha Stadium and Pu'uwai Momi public housing properties, this Master Plan serves as strategic guidance for the State and future District Developer(s) in advancing the first phases of the NASED project into the design / build stage.

It should be noted that while the Pu'uwai Momi public housing project is part of the Hālawa TOD, the public housing project will be managed distinctly and separately from the NASED development by the Hawai'i Public Housing Authority (HPHA).

This NASED PMP is intended to synthesize the findings and recommendations found within and build upon the TOD Plan, technical studies of the NASED area, and develop design standards and technical requirements for the stadium facility and development.

The vision for the NASED builds upon the extensive work conducted in the development of the TOD Plan. Section 5.4 of the TOD Plan outlines notional phasing of the TOD. Recognizing that "successful implementation [of the TOD] relies upon decisions regarding a reconstructed or rebuilt Aloha Stadium's operations and the nature of the mixed-use proposed for the stadium site," the Hawai'i State Legislature passed bold legislation in 2019 which established NASED and delegated authority to DAGS and the Aloha Stadium Authority in collaboration with the Hawaii Community Development Authority (HCDA) to proceed with the planning and due diligence for the NASED project area.

Establishment of the New Aloha Stadium Entertainment District

In response to the findings of the February 2017 Aloha Stadium Conceptual Redevelopment Report, the Proposed Action for NASED encompasses the construction of a new stadium facility in addition to related mixed-use development that will serve to create an entertainment precinct as well as a travel destination on the grounds of the existing Aloha Stadium site in Hālawa.

Under the provisions of Act 172, SLH 2012, DAGS has determined at the outset that an environmental impact statement is required for their proposed NASED as being implemented under their Planning for New Stadium and Site Redevelopment project, DAGS Job No. 12-10-0862. A Programmatic EIS is being prepared for the proposed NASED situated at TMK: (1) 9-9-003:061 and neighboring TMK: (1) 9-9-003:055, 070, and 071 in Hālawa. Although the proposed improvements will be implemented in phases that individually may not have significant environmental impacts, Section 11-200.1-10, Hawai'i Administrative Rules (HAR), requires that phases of a "larger total undertaking" be treated as a single action. Due to the collective scale of the Proposed Action, compliance with HRS Chapter 343 warrants the preparation and processing of an environmental impact statement.

In July 2019, Governor David Ige executed Act 268 to revitalize the Aloha Stadium area and provide funding assistance for the construction of a new stadium. Act 268 states:

"The legislature finds that the Aloha Stadium and lands under the jurisdiction of the Stadium Authority and the Department of Accounting and General Services are underutilized. The stadium facility has been in dire need of significant repair and maintenance for many years. The Stadium Authority has considered repairing, upgrading, and replacing the existing facility to optimize the public's enjoyment and ensure public safety. Redeveloping, renovating, or improving these public lands in a manner that will provide suitable recreational, residential, educational, and commercial areas, where the public can live, congregate, recreate, attend schools, and shop, as part of a thoughtfully integrated experience, is in the best interests of the State and its people."

The ensuing legislation (Act 268, SLH 2019), allows the State, via the HCDA, to upgrade state owned property under the Stadium Authority's jurisdiction and designates the area around the stadium as the 'Stadium Development District'. Act 268, SLH 2019, signed into law on July 8, 2019, appropriated total funds of $350 million— comprised of a mix of funds— to improve the site for public use and to assist with the construction of the 'Stadium Development District'. A new bill anticipated to be introduced in the upcoming 2021 legislative session proposes to amend the roles of the relevant State parties, effectively transferring development responsibility and powers from the HCDA to the Stadium Authority.

Program Description

The State of Hawai'i, through its agencies, DAGS and the Stadium Authority (collective, "the State") intends to procure a series of works and services for Phase 1 of the NASED. Through this process, the State intends to enter into a contract(s) with a private sector entity to deliver these works and services. This PMP supports that procurement process.

The NASED program is intended to encompass the construction of a new stadium facility in addition to related mixed-use development that will serve to create a New Aloha Stadium Entertainment District on the grounds of the existing Aloha Stadium site in Hālawa.

The construction of the new stadium facility and mixed-use development of the entertainment district surrounding the new stadium would be pursued under one or more procurement processes in which the State and District Developer(s) will enter into an arrangement (or series of arrangements). The State-run Developer Procurement process will proceed concurrently with the EIS process due to the time critical and time sensitive nature of escalating construction costs and mounting deferred maintenance expenses tied to the continued operation of the existing stadium facility.

The stadium will be downsized from its existing capacity of 50,000 seats to an anticipated capacity range of approximately 37,500 - 35,000 seats, based on the determination of the developer lead design teams in correlation with the state. It will be configured to support a variety of sports and entertainment events, including football, soccer, rugby and other sports that are played on a rectangular field. Additionally the facility will host concerts, community functions and family-oriented events.

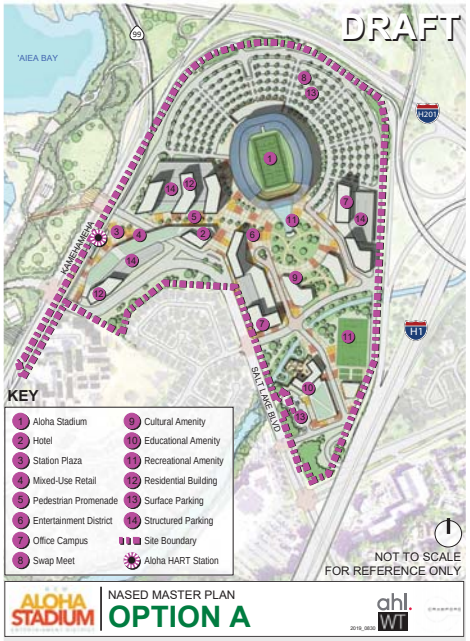
The multipurpose stadium would have a comprehensive array of fan amenities and support spaces to market new events, including additional luxurious seating options, more extensive concessions, and improved facility circulation.

Selection of Conceptual Design

Based upon the site configuration scenarios outlined in the Hālawa Area TOD, Crawford Architects with AHL and WT Partnership delivered three conceptual design plans which further explore how each scenario would proportionally impact the larger development. Each option envisions that the construction of a new stadium would be followed by multiple phases of mixed-use development until the entire site is built out to capacity over time. These concepts were presented to the client followed by open-forum discussions about what opportunities and drawbacks may be presented in each scenario. These discussions provided key insights into what aspects of a conceptual design plan would be critical for project developers to carry forward.

Option A

Utilizing base land-use assumptions, this concept prioritizes directed pedestrian and vehicular traffic patterns. Option A places The New Aloha Stadium where the present stadium sits. Through an incremental redevelopment scenario, the old stadium would be progressively demolished and replaced by new construction, facilitating uninterrupted use of the facility. A widened pedestrian pathway, flanked by ground-level retail and visitor amenities, directly connects the HART Station to a multi-functional entertainment plaza which fronts the stadium. The site maintains ample space dedicated for stadium parking as a large semi-circular lot wraps around the north-facing side of the stadium with mid-rise parking structures alleviating further demand. Residential, hospitality, and retail spaces occupy a majority of the allocated development. This plan requires efficient use of mid-rise and high-rise buildings to maximize operable space while retaining the allocated footprint.



ALOHA STADIUM

NASED MASTER PLAN

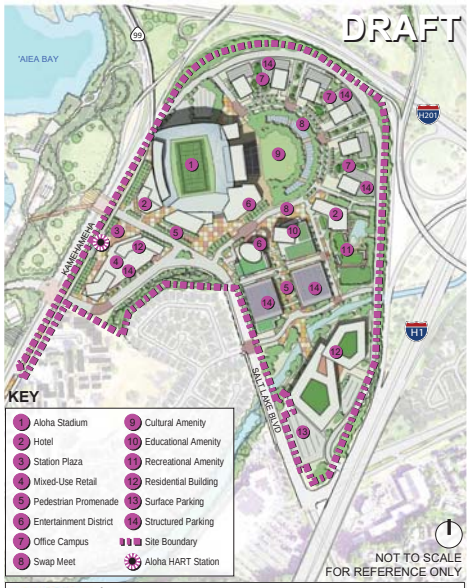
OPTION A

ahl. WT

2019_0830

Option B

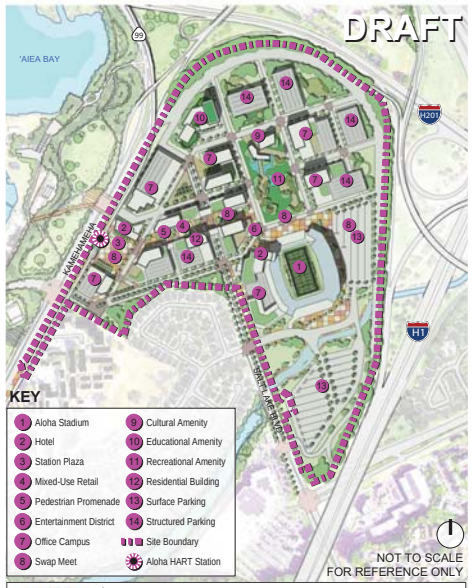
This option creates the shortest distance between the HART Station and the Stadium to maximize TOD development and event day access while preserving more of the site for future development. Of the three concepts, this option assumes the highest development densities and provides additional dedicated parking for the stadium. The new Aloha Stadium is built to the west of the existing stadium, along the Kamehameha Highway. The existing stadium can remain operational while the new stadium is constructed. Upon completion, stadium operations move into the new venue and the old stadium is demolished, whereupon the bowl-shaped depression remaining after demolition is reprogrammed as an outdoor performance venue and community recreation space. Option B creates the most compact mixed-use core of any development scenario, with residential units residing primarily in high-rise and mid-rise complexes. In addition, ground-level retail and entertainment venues reside along a majority of the pedestrian connector between the stadium and station.



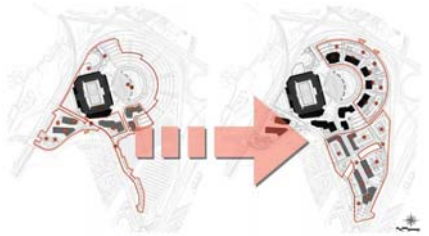
ALOHA STADIUM | NASED MASTER PLAN **OPTION B**

Option C

Option C creates the longest distance between the HART Station and the Stadium, allocating the most area for a pedestrian retail experience between the two. This option would require the most significant initial investment to the project, as it eliminates the circular nature of the existing site geometry and replaces it with a more typical street grid and city block configuration. As with Option B, the existing stadium remains operational throughout construction of a new stadium to the south. By placing the New Aloha Stadium adjacent to the Hālawa Stream, this design provides a large, multi-functional 'central park and town square' as the core of the mixed-use area.



ALOHA STADIUM | NASED MASTER PLAN **OPTION C**



Description of NASED

NASED will be developed over several years and will include the demolition of the current Aloha Stadium, the construction of a new stadium, surrounding developments (envisaged to include retail, residential, commercial, hotels, hospitality and cultural and community facilities) and supporting infrastructure such as roadways and shared public spaces (collectively, the "NASED Program"). The NASED Program includes two key components:

- The "New Aloha Stadium", comprising the construction of a new, modern, 27,500 to 35,000 seat stadium facility.
- The "Mixed-Use Development", comprising development which may include residential, retail, entertainment, office space and hotel development, along with ancillary facilities and supporting infrastructure, public amenities, and requisite utility improvements.

The development and construction of the Proposed Action is expected to occur over several years. This EIS discusses this development and construction occurring over several discreet "phases". These phases are intended to illustrate various impacts and requirements for potential milestones of development. In practice, development may occur in a more linear (or other) manner at the direction of the selected District Developer(s). In summary, the "phases" assumed for the purposes of this EIS are:

- An "Initial Development", comprising the construction of the New Aloha Stadium along with an initial tranche of Mixed-Use Development as described in Section 2.4.1 (Initial Development). In instances in this EIS, the term "Phase 1A" refers to the New Aloha Stadium and the term "Phase 1B" refers to this initial tranche of Mixed-Use Development.
- The "Remaining Development", comprising the remainder of the Mixed-Use Development as described in Section 2.4.2 (Remaining Development). In instances in this EIS, the terms "Phase 2," "Phase 3," "Phase 4," and "Subsequent Phases" refer to the Remaining Development.

Programmatic Environmental Impact Statement

An EIS document is being prepared as a "Programmatic" EIS in alignment with the aforementioned parallel procurement process being pursued by the State. The Programmatic EIS is a variation of a standard impact statement EIS, which seeks to broadly evaluate the effects of proposed actions that typically include a wide range of individual projects whose implementation is anticipated to occur over a long time frame. The level of detail that is presented is sufficient to allow for the development of broad mitigation strategies in response to anticipated impacts to environmental resources.

This programmatic EIS does not evaluate project-level issues such as specific design details as those are not ready for decision at this stage of project delivery and will be defined once the selected District Developer(s) plans are finalized. Instead, this Programmatic EIS will examine the interaction of the proposed project and assess cumulative effects. This EIS, when project level issues are determined, may need to be followed by subsequent project-level environmental review documentation which may take the form of Supplemental EIS, Environmental Assessments, EA exemptions, etc. Such project-level environmental review documents will analyze a narrower project proposal related to the initial broad (programmatic) proposal identified in this EIS.

This approach, known as tiering, is intended to expedite the resolution of big-picture issues so that subsequent studies, if needed, can focus on project-specific impacts and issues. Those big-picture issues and analyses do not have to be repeated in the subsequent environmental reviews, but rather can be referenced from the programmatic document. Tiering allows project-level environmental review documents to be conducted closer in time to the actual construction phase, or as funds become available for construction. Tiering also expands the opportunities for public and agency input by breaking the environmental analyses into multiple levels. Individuals interested in the overarching big-picture questions have an opportunity to participate in the programmatic EIS, and those who

are interested in localized impact and mitigation issues can focus their efforts on the specific project-level analyses, when they become available in the future.

In August 2019, DAGS developed an EIS Preparation Notice (EISPN) for the NASED Program. This was published in OEQC's publication "The Environmental Notice" on September 23, 2019 for public comment.

The EIS is being developed under a "Programmatic EIS" methodology, which means that a mix of uses for the Hālawa site is required, while stipulating that a range (maximum and minimum) of development area for each use must be satisfied. This is to ensure that the desire for a vibrant, mixed-use project is fulfilled.

A Programmatic EIS identifies a range (maximum and minimum) of potential development area and anticipated types of uses on a subject site and discloses the impacts of the proposed maximum scale of potential development. The Programmatic EIS process is intended to maximize interest in partnering with the State by allowing for flexibility from a design, site planning, and programming standpoint.

The EIS process includes a master planning element. Community outreach will continue throughout the EIS and master-planning processes. This has and will continue to help shape the Concept Master Plans for the entire site, ensuring there is a direct and meaningful role for residents to influence the development of this important public asset.

The comment period for the EISPN concluded on November 7, 2019. These comments are informing and shaping the draft EIS, which will follow. A complete and approved EIS is expected to be required for the completion of the Developer Procurement and execution of the respective agreement(s).

It is anticipated that a significant portion, if not all, of the NASED Program will be delivered under the forthcoming acceptance of the Programmatic EIS.

Depending on the District Developer's final design or should Respondents make any changes resulting in individual or cumulative impacts not originally disclosed i.e. size, scope, location, intensity, use, and timing of the action, a supplemental EIS may be required for the New Aloha Stadium and/or the Mixed-Use Development.

District Area Overview

The NASED site, herein also referred to as the Project Site, is located in Hālawa in the central portion of the island of O'ahu. The NASED development is in an area that connects to the adjacent communities of 'Aiea, 'Āliamanu, Foster Village, and Salt Lake. Per existing legislation, the project will be located on the existing Aloha Stadium property in Hālawa. A site selection study was completed prior to the legislation, which sufficiently demonstrated that the Aloha Stadium site was the most feasible location for the new entertainment district.

Hālawa is situated approximately 8 miles to the west of downtown Honolulu on the eastern side of Pearl Harbor's East Loch. The region features a mix of commercial, residential, and military uses. The Project Site is located in what the Department of Planning and Permitting (DPP) identifies as the "Primary Urban Center," one of eight geographical regions for which regional development plans or sustainable community plans have been adopted to guide development and public facility improvements on the island of O'ahu. Pursuant to the June 2004 Primary Urban Center Development Plan, the overarching planning goal is to enhance livability while accommodating moderate growth.

The Project Site encompasses approximately 98 acres and can be further identified by four discrete adjoining Tax Map Key (TMK) parcels partially separated by Salt Lake Boulevard (See Figure 1-2: TMK Map). The larger northeastern parcel, TMK: [1] 9-9-003:016 at 99-500 Salt Lake Boulevard includes the existing Aloha Stadium and an adjacent parking area to the southeast generally bounded by Kamehameha Highway on the west, Moanalua Freeway on the north, the H-1 Freeway on the east and Salt Lake Boulevard on the south. The smaller parcels to the west, TMK: [1] 9-9-003:055, 070, and 071 at 99-500 Salt Lake Boulevard, and 99-252 and 99-232 Kamehameha Highway are generally bound by Kamehameha Highway to the northwest, and legs of Salt Lake Boulevard on the northeast, southeast and southwest sides. TMK: [1] 9-9-003:073 will contain the future Hālawa/Aloha Stadium Transit Station.

Currently, the Project Site consists of the existing stadium and its surrounding surface parking lots, the future Hālawa/Aloha Stadium Transit Station, and two undeveloped strips of land. The Aloha Stadium parcel currently contains the stadium facility, which seats approximately 50,000 people and the surrounding parking areas with approximately 7,476 stalls. The parking area around the Aloha Stadium radiates in circular rings from it, while additional parking extends southward, via three bridges, across Hālawa Stream. The parking lot is the site for several events including the Swap Meet, the 50th State Fair, car shows, and auto/motorcycle racing.

Surrounding Area

The District is situated near large residential and commercial areas, across Kamehameha Highway from Joint Base Pearl Harbor-Hickam (JBPHH) and adjacent to the Hālawa Interchange, which is the largest highway interchange in the State of Hawai'i, converging Interstate Routes H-1 (Queen Liliuokalani Freeway), H-3 (John A. Burns Freeway), H-201 (Moanalua Freeway); and Kamehameha Highway (Route 99), which collectively provide access to urban Honolulu, Ko'olau Poko, 'Ewa, and Central O'ahu.

Immediately southwest of the District across Salt Lake Boulevard is the Pu'uwai Momi Public Housing, the Hālawa Valley Estates single-family subdivision and the Stadium Marketplace shopping mall, which is anchored by a K-Mart and a Sack N Save supermarket. To the southeast across Interstate H-1 is the Crosspointe Townhome Community and across Kahuapaani Street from there is Stadium Mall, which includes the only permanent public ice skating rink in Hawaii at Ice Palace Hawai'i. Further to the southeast are the residential communities of Foster Village, Āliamanu and Salt Lake. Within these communities, there is a mixture of single and multi-family residential developments as well as Radford High School, a public school administered by the Hawaii Department of Education (DOE), Salt Lake District Park, the Honolulu Country Club golf course, and neighborhood and regional commercial centers.

The District is located approximately 0.25 miles from the nearest shoreline of Pearl Harbor's East Loch, and 0.7 miles to the northeast of The Pearl Harbor Visitor Center and Historic Sites complex. There are major visitor attractions in Pearl Harbor such as: the USS Arizona Memorial; the USS Bowfin Submarine; the USS Missouri Battleship; and, the Pacific Aviation Museum. The Pearl Harbor Visitor Center and Historic Sites complex receives approximately two million visitors per year.

Much of Pearl Harbor and more than 10,000 acres of adjacent properties are occupied by the U.S. Navy, including the Naval Station Pearl Harbor and Pearl Harbor Naval Shipyard (the regional maintenance center for the U.S. Navy). In 2010, the Navy and Air Force merged their two nearby bases; Naval Base Pearl Harbor joined with Hickam Air Force Base to create Joint Base Pearl Harbor-Hickam. JBPHH is a major military installation and employment center. Pearl Harbor is the headquarters of the U.S. Pacific Fleet and is home to the Anti-Submarine Warfare Force and Submarine Forces Pacific Fleet, among others. There are over 17,500 active duty U.S. Military and over 20,000 dependents and civilians located in JBPHH. The Pearl Harbor Naval Shipyard is the largest industrial complex in Hawai'i, with a workforce of 4,700 civilians and military personnel (Foley & Lardner, 2014).

To the northwest beyond the Hālawa Interchange is

the residential subdivision known as Hālawa Heights, which extends up the hillside to Marine Corps Base Hawaii, Camp H.M. Smith. The installation serves as headquarters for U.S. Marine Corps Forces, Pacific; U.S. Pacific Command; and other regional commands and detachments. On a lower portion of the subdivision is the DOE's Gustav H. Webling Elementary School.

The town of ʻAiea is located to the north across Moanalua Freeway from the District. The area is home to a small strip mall, the ʻAiea Shopping Center, which contains the Aiea Bowl bowling alley, a Times Market supermarket, restaurants, and other businesses. The area also includes several churches, schools and other community facilities including two DOE schools, ʻAiea Elementary School and Alvah A. Scott Elementary School. ʻAiea is divided by Interstate H-1 (Queen Liliuokalani Freeway) with the northeastern portion (mauka side) containing more businesses and public facilities such as ʻAiea Intermediate School, ʻAiea High School, ʻAiea Public Library, all of which are part of the DOE system; and, ʻAiea District Park. Rising mauka towards the Koolau Mountain Range is the residential subdivision of ʻAiea Heights. Southwest of ʻAiea Town across Kamehameha Highway is Aiea Bay State Recreation Area, which lies along the shoreline of ʻAiea Bay, a small inlet of Pearl Harbor's East Loch. Forming the northwestern side of ʻAiea Bay is McGrew Point, where the McGrew Point Naval Housing Area is located.

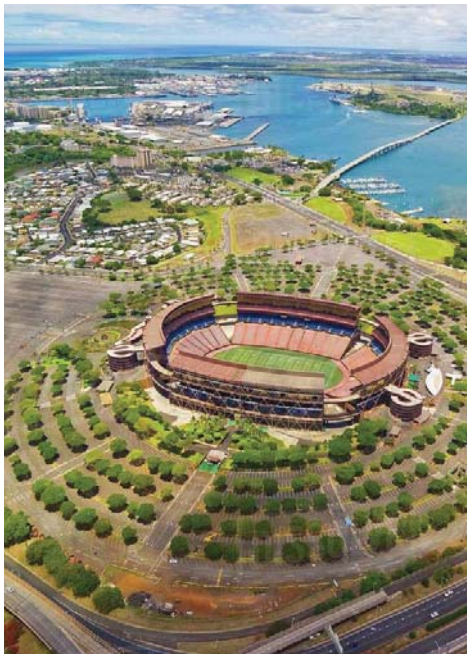
On the west side of McGrew Point, Kalauao Stream discharges about 400 feet west of Loko Paʻaiau (Paʻaiau Fishpond), which is one of three fishponds that remain relatively intact out of 22 that historically were located along the shoreline of Pearl Harbor. At the invitation of the U.S. Navy, Hawaiian civic clubs and members of the ʻAiea community are restoring the fishpond. The fishpond is located in the ahupuaʻa of ʻAiea, which relatively small, sandwiched between Kalauao Stream and ʻAiea Stream, which drains into ʻAiea Bay about 0.60 mile to the southwest. Nevertheless, the postal district of ʻAiea, zip code 96701, includes the areas of Red Hill on the east side of Interstate Route H-3, Hālawa, Aiea, Kalauao and Waimalu.

Northwest of Kalauao Stream is the ahupuaʻa of Kalauao, which extends to Waimalu Stream to the northwest. This area has seen extensive development in recent decades, creating a commercial and residential hub commonly referred to as "Pearlridge." The area, located less than two miles northwest of the District, is dense with commercial development (retail and office), high-density apartment buildings, light-industrial uses, a medical complex, and various community facilities. The area gets its name from the Pearlridge Center, the largest enclosed shopping center in Hawaiʻi. Now renamed simply Pearlridge, the mall houses over 170 stores, food courts, numerous full-service restaurants, 16 theaters, an emergency clinic, and an 8-story office complex. Amidst Pearlridge remains the iconic Sumida Watercress Farm that harkens back to an earlier era of agriculture in the area.

In 2014, the City Council granted development group CM

Kam Properties LLC's rezoning approval request for a development project known as "Live, Work, Play, ʻAiea," a $767 million, five-tower, 1,500 home condominiums and mixed-use project in ʻAiea across from Pearlridge mall at the site of the former Kam Drive-In Theater, which converted to the Kam Swap Meet before being sold. The site is less than two miles northwest of the District. The development, which was originally expected to be completed by 2027, would include 143,000 square feet of retail and restaurant space, 80,000 square feet of office space, and potentially a 150-room hotel.

The State highways and local arterial streets link the various nodes of activity throughout the region. Kamehameha Highway is the major link between Pearl City, ʻAiea, and the Māpunapuna/Airport areas. Salt Lake Boulevard is the major link between Āliamanu and Foster Village and the District. Kahuapaʻani Street connects to the mauka Hālawa Valley area and Moanalua Road is a primary connection to ʻAiea. The HART rail project will provide will expand transit options to the District and the surrounding regions once it is operational. In addition to the rail station, there are currently 20 bus stops present within in a 0.25-mile radius from the District perimeter.



1.3

ROLE OF THE PROGRAMMATIC MASTER PLAN

Purpose and Need

The Programmatic Master Plan sets forth a vision and guidelines for the selected District Developer(s). It is an aggregated collection of extensive input from area residents, members of the public, existing Stadium stakeholders and public agencies.

A programmatic plan for the entire parcel was developed herein.

A full master plan needs to be designed because even though the Mixed-Used Development is expected to be built out over time and respond to evolving market demands, the District Developer(s) will be required to consider the overall District in their initial planning so that their initial designs can be expanded over time. A concept that locks itself into a small portion of the site and is unable to be expanded to cohesively include the full site would do a disservice to the community and would not be following the principles of the TOD Plan.

As identified in the NASED EISPN, three optional stadium locations within the NASED development were initially examined. Of those three options, Option B in which the new stadium is built to the west of the existing facility was examined in closer detail in this PMP document. While no site is 'perfect', the reasoning behind why Option B was selected for further examination is multi-faceted. First, the intention of the construction sequencing for the new facility is to allow for the existing Aloha Stadium to continue operation while the new stadium is being built. After the new facility is finished and in operation, the existing stadium would be demolished. Next, by building the new facility to the west of the existing stadium it would be in closer proximity to the new Aloha Stadium HART Station. The transit-oriented nature of the NASED development calls for strong pedestrian connections to the HART station, so providing close connections between the stadium and station will serve to improve the visitor experience and reduce vehicular traffic. Additionally, the Option B stadium location was the most well received option by the community in the community meetings and workshops.

How to Understand and Interpret the PMP

Why is a master plan being designed at all, when this programmatic master plan will not be the final site plan, and the District Developer(s) led teams will be asked to do this?

- To prove up the full build program from Victus / RCLCO.
- To set a standard for Developer teams.
- To provide detail to the programmatic EIS.
- To respond to comments from our Client and the Community.
- To show that we are listening and that we will be sharing the same information with the Developer teams.

Correlation to a Design Concept

The PMP is a holistic summary of the background information, goals, and guidelines which have served to define the vision for NASED up to this point in time. This document is intended to serve as a point of guidance and process overview for future development of design concepts.

Based on the analysis of project metrics as elaborated upon by this document, any future development plans that are beholden to the PMP will produce an assured array of benefits for the State of Hawaii and the surrounding communities, inclusive of, but not limited to, the following:

- A new, state of the art facility will provide a great venue for sporting events, concerts, and other entertainment opportunities for locals as well as tourists.
- New and varied entertainment talent will be drawn to the state due to the new facility.
- The housing market will get a much needed influx of units for both sale and rent.
- Additional and updated tourist attractions will bring in additional funds to the state.
- Amenities for those living in surrounding neighborhoods will increase substantially.
- The TOD nature of the site will focus heavily on a seamless movement of people to and from the site which will ease traffic congestion issues in the surrounding areas.

Future development on the Halawa site will be required to work within the metrics as outlined in the PMP while creating the final Master Plan. Developer teams will be able to implement innovative design concepts at their own discretion assuming they fit within these parameters.

Indicative 'Phasing' of NASED

Underpinning the PMP is the notion that NASED will be developed over several years. To define this expected ongoing development, the PMP considers indicative 'phases' of construction and development. In practice, development may occur in a different manner. Therefore, the assumptions made herein regarding phasing are indicative. From a nomenclature perspective, the following applies for reading alongside the EIS and various reports appended to the EIS:

- Phase 1A refers to the New Aloha Stadium and the demolition of the existing Aloha Stadium
- Phase 1B refers to the initial tranche of Mixed-Use Development
- Phase 2 refers to the secondary tranche of Mixed-Use Development
- Phase 3 refers to the final tranche of Mixed-Use Development

Proposed Site Program

The 2019 Victus report outlines the programmatic quantities which have been identified as providing a mix of economically sustainable development. It should be noted that the Mixed-Use Development is intended to have an economic symbiotic relationship with the New Aloha Stadium.

The financial success of a New Aloha Stadium depends on the mix of ancillary development to provide a continuous mix of revenue-generating activities. This program as outlined in the PMP document is meant to provide a feasible option for the site's programmatic composition, but it is anticipated that developers will need to undertake their own market analysis which may alter the mixture of anticipated program.

The cornerstone of the NASED development is the New Aloha Stadium, and the mix of ancillary development will provide a multitude of site uses outside of the immediate entertainment venue features of the existing site. It is anticipated that the New Aloha Stadium and the initial tranche of Mixed-Use Development will be completed within five years, and no specific timeline has been provided for 'full build-out' since future development will be determined by what the market allows.

The proposed program of the Mixed-Use Development, including the initial tranche (indicated as "Phase 1") and the full build out, is indicated on the table on the previous page. The residential component of the NASED program is broken into three varying socioeconomic 'tiers', with the idea that all price-points of housing will be evenly distributed throughout NASED. Preference should be given to provide housing within close proximity to the new Aloha Stadium HART Station.In addition to responding to the City and State affordable housing requirements, it is recognized and understood through documented community feedback during the production of this PMP that the NASED development should consider, amongst other social and community needs, the need for socio-economically accessible housing for the people of O'ahu. The benefit of the variety of the NASED program is that it combines residential areas with retail and commercial spaces. Community feedback has indicated the desire for convenience stores or grocery stores, and a variety of other stadium and entertainment related commercial activities will provide on-site amenities for both the residents of NASED and the neighboring residential areas.

The program outlined in the 2019 Victus/RCLCO report includes the potential for both office and hotels within the NASED site. A key component of the economic success of NASED is the diversification of revenue streams. The success of the site cannot solely depend on the stadium. Office buildings within the NASED development would bring additional daytime activity throughout each week. On-site hotels would be a sought after amenity for visiting teams and organizations who come to town for events while also increasing the amount of visitors on site who may want to patronize a restaurant or buy a souvenir at the Swap Meet.

Maintaining activity throughout the day around the NASED development will help drive economic success. As everyone on Oahu is experiencing in the era of Covid-19, the diversification of the local economy to help relax the strong reliance on tourism is the key to a successful future for the district. Understandably, with more visitors and residents comes more traffic, but the multi-modal transportation techniques discussed in this PMP are meant to both alleviate traffic and generate revenue for the district.

PROGRAMMATIC MASTER PLANNING PROCESS

Public outreach and consultation are important components of any master planning process. Therefore, it was critical from the outset of this project to initiate early and open discussion with interested persons and agencies concerning the development of this Programmatic Master Plan.
This section of the Plan details the public outreach and consultation for Programmatic Master Plan District.

Building on the TOD Planning Process

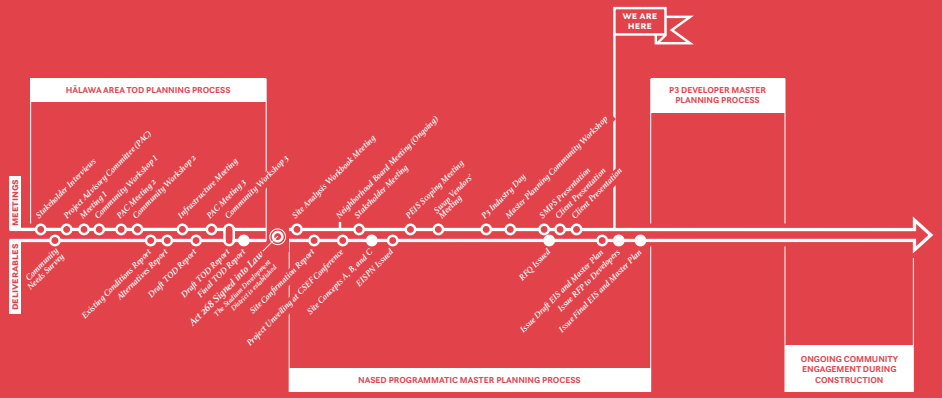
It should be noted that this process built upon the extensive work completed by the City and County of Honolulu and community during the Hālawa TOD planning process, which was carefully reviewed and considered throughout the entirely of this project.
This community engagement effort is in many critical ways a continuation of the TOD Plan's outreach and community engagement work and looked to build upon the many important successes of that planning process.

Expectations for the District Developer(s)

It is also expected that the District Developer(s) will pay equal careful consideration to the TOD planning process and the process undertaken for this Master Plan and:

1) Embrace the input provided by the community and stakeholders in the continued planning and development of the District;
2) Develop their own relationships with the community and stakeholders that will inform and enhance their planning and design; and
3) Continue to regularly engage with community and stakeholders throughout the planning, design, and construction processes through additional workshops and ongoing attendance at community meetings and events.

Planning Timeline



Public Design Process

Community input and transparent processes were critical to the success of the NASED. Community workshops (sometimes referred to as design workshops or charrettes) were an important element of this input and enhance transparency by giving stakeholders an opportunity to inform the design of the NASED early in the Programmatic Master Plan process.

That NASED team created and successfully led community workshops to offer members of the public and stakeholders meaningful opportunities to work with the design team to ensure that the design of the new District integrates community feedback and addresses critical social and economic needs.

Community Meetings

The project team attended the neighborhood board meetings for Neighborhood Boards No. 18 and No. 20 and the ACA monthly meetings in order to develop and maintain a strong working relationship with area stakeholders and to keep the community informed as to project process and events.

Minutes for all the meetings attended by members of the project team are included in the NASED Scoping Report. Only approved minutes for 2019 are available for the 'Aiea Community Association.

At the encouragement of the 'Aiea Community Association, the NASED team also set up an informational booth at the 'Aiea Holiday Family Fair held on Saturday, December 14, 2019. During this event, the project team distributed information about the project to the public, provided flyers about the upcoming workshop, and collected emails for the electronic newsletter.

In December 2019, the project team then began the community workshops for the Master Planning process. The first of these meetings was held on Wednesday, December 18, 2019 and was open to the public. The second was held on Monday, January 27, 2020 for stadium vendors, licensees, users, and neighboring businesses.

Monthly meetings for December 2019:

- Neighborhood Board No. 18 (Āliamanu – Salt Lake) – Recess
- Neighborhood Board No. 20 ('Aiea) – December 9, 2019
- 'Aiea Community Association Meeting – No meeting

Monthly meetings for January 2020:

- Neighborhood Board No. 18 (Āliamanu – Salt Lake) – January 9, 2020
- Neighborhood Board No. 20 ('Aiea) – January 12, 2019
- 'Aiea Community Association Meeting – January 19, 2020

Monthly meetings for February 2020:

- Neighborhood Board No. 18 (Āliamanu – Salt Lake) – February 13, 2020
- Neighborhood Board No. 20 ('Aiea) – February 10, 2019
- 'Aiea Community Association Meeting – February 17, 2019

Monthly meetings for March 2020:

- Neighborhood Board No. 18 (Āliamanu – Salt Lake) – Recess due to COVID
- Neighborhood Board No. 20 ('Aiea) – March 9, 2020
- 'Aiea Community Association Meeting – Canceled due to COVID

Monthly meetings for April 2020:

- Neighborhood Board No. 18 (Āliamanu – Salt Lake) – Recess due to COVID
- Neighborhood Board No. 20 ('Aiea) – Recess due to COVID
- 'Aiea Community Association Meeting – No meeting due to COVID

Monthly meetings for May 2020:

- Neighborhood Board No. 18 (Āliamanu – Salt Lake) – Recess due to COVID
- Neighborhood Board No. 20 ('Aiea) – Recess due to COVID
- 'Aiea Community Association Meeting – No meeting due to COVID

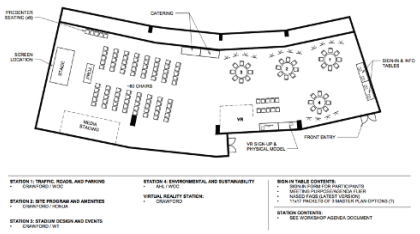
Community Design Workshops

In December 2019 and January 2020, Crawford Architects and Honua Consulting led two community design workshops to solicit valued input from the community and area stakeholders into the Programmatic Master Plan. Crawford Architects led these community workshops to offer members of the public and stakeholders meaningful opportunities to work with the design team to ensure that the design of the new District integrates community feedback and addresses critical social and economic needs.

The express goals of the workshops were as follows:

- Build understanding about the history of project, including other planning efforts and previous initiatives that have informed the project (re: provide information so that all participants are operating from the same information and clearly understand previous decisions that have already been made and are not subject to discussion at the workshop);
- Report on the work that has been undertaken to date on the New Aloha Stadium Authority District;
- Create a space and opportunity to community members to provide input to the Master Plan and design of the NASED;
- Identify critical community and stakeholder issues, needs, and expectations; and
- Identify ways forward that build upon existing community engagement and partnerships to ensure that the district meets and exceeds the needs of its stakeholders.

Room Layout



Note: each table will be a 5' round with 8-10 seats. Facilitator, scribe, research people are to stand if needed.

Topic Areas / Subgroups / Stations

There were five (5) stations for public engagement during the workshop, they are identified below.

TABLE OR STATION
Sub-Topic 1: Traffic, Roads, Parking (Transportation Infrastructure)
Sub-Topic 2: Site Program and Amenities, Recreation, Culture
Sub-Topic 3: Stadium Design and Events
Sub-Topic 4: Environmental and Sustainability, Surrounding Community
Virtual Reality & Physical Models Station

Figure 13. Room layout for Community Design Workshops

Outcomes of the Public Master Planning Community Workshop

Meeting Location	Aloha Stadium Hospitality Room 99-500 Salt Lake Boulevard Aiea, Hawaii	96818
Date	12/18/2019
Time	7:00 pm – 9:00 pm, HST

There were approximately 50 participants in the NASED Master Planning Community Workshop. The public was invited to participate in this workshop through a series of notices that included notifications to the area neighborhood boards, participation in the Aiea Holiday Fair, email notifications, and media notices. Participants included representatives of local community associations and neighborhood boards, residents, the Faith Action for Community Equity (FACE) group, swap meet vendors, and concerned citizens.

The workshop, led by Crawford Architects, and supported by other members of the project team, provided five (5) stations for public engagement during the workshop:

- Sub-Topic 1: Traffic, Roads, Parking (Transportation Infrastructure)
- Sub-Topic 2: Site Program and Amenities, Recreation, Culture
- Sub-Topic 3: Stadium Design and Events
- Sub-Topic 4: Environmental and Sustainability, Surrounding Community
- Virtual Reality and Physical Model Station

The primary points of comments included: traffic, affordable housing, noise, recreational opportunities, stadium capacity, connectively, the swap meet, green space for the surrounding community. A more detailed compilation of the comments are as follows:

Sub-Topic 1: Traffic, Roads, Parking (Transportation Infrastructure)

- Having adequate parking on site
- Noise projection and its impact on surrounding residential community
- Designing parking to more effectively accommodate tailgating and other activities
- Addressing off-site parking in surrounding residential areas (i.e., people current park off site in neighboring areas when going to events at Stadium to avoid parking fees)
- Improving traffic flow in and out of site
- Pedestrian access to site, particularly between rail station and stadium
- Creating rideshare zones to make it easier to for rideshare customers to access property
- Adding 20,000 affordable units
- Having adequate parking for residential units
- Green space
- Viewsheds

Sub-Topic 2: Site Program and Amenities, Recreation, Culture

- Activities for a wide range of users, including children
- Parking structures, including structures that include connectivity to other features on site
- Including retail and other commercial uses on site and at rail station
- Connect to Pearl Harbor Historic Trail / bike path / visitors center
- Make the site bike friendly
- Swap meet needs to be on concrete area, possibly south lot (no grass)
- Encourage small, local, vendors and shops
- Include a museum or other cultural interpretation

- 20,000 units of affordable housing
- Create a livable, connected community (connect to neighboring residential areas, parcels, including pedestrian overpasses)
- Consider noise impacts
- Including healthcare and other social services
- Address illegal parking and traffic issues
- Minimize need for a car and encourage multimodal access
- Consider security needs
- Create cultural space, like green space or other performance space
- Consider parking underground beneath a green space

Sub-Topic 3: Stadium Design and Events

- Consider proximity of stadium to rail station and adjacent neighborhoods
- Mitigation / minimize noise from stadium
- Keep swap meet during construction
- Ensure dust and contaminants can mitigated and contained during construction and removal of existing stadium
- Use native flora and cultural plants for native gathering purposes
- Incorporate cultural education of native landscape and history
- Mitigate lighting (shield down) to protect seabirds and marine life
- Option "C" is too close to residential areas (stadium on south lot)
- Need to add affordable housing
- Widen Salt Lake Boulevard
- Pedestrian promenade (as in Option "B")

Sub-Topic 4: Environmental and Sustainability, Surrounding Community

- Design for an integrated community
- Limit car usage
- Lower carbon footprint
- Integrate permeable hard surfaces
- Create a multi-use amphitheater for community events and tailgating
- On site water detention for wetlands and wildlife
- LEED builds
- Use solar panels and other forms of renewable energy
- Address sea level rise, tsunami, climate concerns
- Affordable housing
- Preserve viewsheds / corridors
- Link to surrounding area
- Improve traffic issues

Virtual Reality and Physical Model Station

- Affordable housing / increase density
- Create open spaces where games can be viewed
- Maintain a sense of place
- Consider outward views as well as inward views
- Standing plazas with field views
- Design with a Hawaiian sense of place
- More UH branding in stadium design
- Murals on buildings

Outcomes of the Master Planning Stakeholders Workshop

Meeting Location	Aloha Stadium Hospitality Room 99-500 Salt Lake Boulevard Aiea, Hawai i 96818
Date	01/27/2019
Time	7:00 pm – 9:00 pm, HST

There were approximately 50 participants in the NASED Master Planning Community Workshop. The public was invited to participate in this workshop through a series of notices that included notifications to the area neighborhood boards, participation in the Aiea Holiday Fair, email notifications, and media notices. Participants included representatives of local community associations and neighborhood boards, residents, the Faith Action for Community Equity (FACE) group, swap meet vendors, and concerned citizens.

The workshop, led by Crawford Architects, and supported by other members of the project team, provided five (5) stations for public engagement during the workshop:

- Sub-Topic 1: Traffic, Roads, Parking (Transportation Infrastructure)
- Sub-Topic 2: Site Program and Amenities, Recreation, Culture
- Sub-Topic 3: Stadium Design and Events
- Sub-Topic 4: Environmental and Sustainability, Surrounding Community
- Virtual Reality and Physical Model Station

The primary points of comments included: traffic, affordable housing, noise, recreational opportunities, stadium capacity, connectively, the swap meet, green space for the surrounding community. A more detailed compilation of the comments are as follows:

Sub-Topic 1: Traffic, Roads, Parking (Transportation Infrastructure)

- Improved stalls for swap meet
- Location of swat meet in proximity to rail station
- Identification of dedicated ride share (Lyft, Uber) locations
- Ensure space(s) for tailgating
- Need for bike baths throughout site
- Quality asphalt for property
- Stadium mall tenants expressed concern about competition once the site is built out
- Connectivity from rail station to NASED
- Need for open spaces for both swap meet and state fair
- Connectivity with community
- Ingress and egress with H-1

Sub-Topic 2: Site Program and Amenities, Recreation, Culture

- Hawai'i and/or Hawaiian design / feel in the NASED
- More permanent ATMs
- Keep rent the same for swap meet vendors
- Group surface parking together and group swap meet vendors together
- Swap meet needs to be on concrete
- Parking stalls need to be bigger (primarily concern of swap meet vendors); stall size needs to fit swap meet vans
- Rest nodes and seating areas at swap meet
- Consistent signage for stadium and swap meet
- Preference for Option A due to parking and location of vendors (vendors prefer commercial activities near rail station and mall vendors prefer retail further away from Stadium Mall)
- Add restrooms outside in NASED
- Add lighting for early morning swap meet set up

Sub-Topic 3: Stadium Design and Events

- Put open space in upper Hālawa lot instead of low lot
- Space for marching band warm up
- Mix 50th State Fair with amphitheater

- Rain shield
- Improve field so compliant for rugby
- At least four locked rooms
- Keep field cool
- Retractable roof
- Consider logistics for 18,000 people for graduations
- Support high school graduation activities, which require lining up 600-700 students at a time
- Improve lighting
- Egress for students and families
- Accommodations for ADA compliance
- Permanent fair asset (like the London Eye)
- Footings for temporary buildings
- Water, power, open space for large scale tents (footings)
- Level ground required for temporary events set up
- Grass field ideally for temporary events
- Consider tailgating area
- Improve lighting through NASED

Sub-Topic 4: Environmental and Sustainability, Surrounding Community

- No comments provided

Virtual Reality and Physical Model Station

- No comments provided

Input from the Honolulu Department of Planning & Permitting (DPP)

This section was created as a result of multiple conversations and key input from DPP. The input from DPP is important to ensure the NASED PMP complies with the essence of the Hālawa Area TOD Plan. All discussions with DPP have centered on the fact that the NASED PMP (and the Hālawa Area TOD Plan) are programmatic in nature, and the final design decisions and approvals will ultimately be the responsibility of the developer-lead design teams.

Over the course of the process of creating the NASED PMP, the NASED team met and consulted with DPP to both keep the City appraised and ensure the design intent of the Hālawa Area TOD Plan was being implemented. On 8/31/2020 the NASED team met with DPP representatives, and DPP gave a short presentation which summarized their feedback. The following pages include annotated diagrams of the NASED programmatic master plan which incorporates DPP's feedback into the design concept. The feedback DPP provided centers around the specific ways in which the NASED programmatic master plan integrates the essence of the Hālawa Area TOD Plan. It is recognized that the community provided considerable feedback and input into the creation of the Hālawa TOD Plan, so any major manipulations to the plan would merit additional discussion. The goal from the conception of the NASED development has been for the development to fit within the umbrella of the Hālawa Area TOD Plan principles. The feedback DPP has provided is passed on to both developers and the community through this document.

The feedback from DPP is broken into key categories and will be addressed over the following pages:

- Height Limits
- Massing Density
- Land Use
- Salt Lake Blvd. Treatment
- Building Orientation
- Connections to Adjacent Neighborhoods
- Community Benefits

The key takeaway from DPP's input to the NASED conceptual master plan is that no 'deal killers' were foreseen. All specific planning details will be thoroughly vetted by future design teams, but the NASED PMP (with some adjustments which are documented below) does not generally have conflicts with the Hālawa TOD Plan. Any substantial alterations to the Hālawa Area TOD Plan height map would need additional review, but both the NASED PMP and Hālawa Area TOD Plan share the same goal of having a high-density massing of program nearest to the new Aloha Stadium HART Station. Due to the likelihood of the first construction phases occurring in close proximity to the HART Station DPP has indicated that conversations of increased massing in other portions of the site (by altering the height map of the Hālawa Area TOD Plan) are best had in the future once the market can prove itself with the early success of the NASED development.

Hālawa Area TOD Plan

NASED Programmatic Master Plan

Height Limits

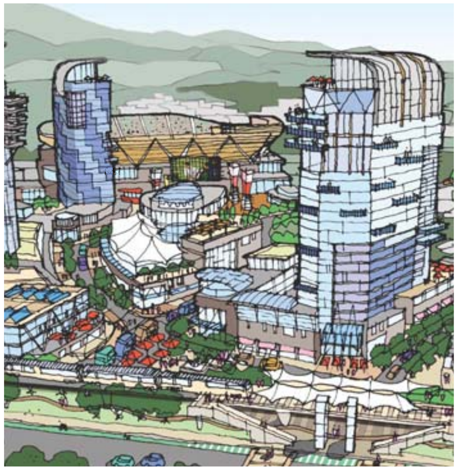
The conversation with DPP regarding height limits was focused on the key differences for massing distribution between the TOD Plan and the NASED PMP. The TOD Plan height map (seen below) shows the highest allowable height occurring adjacent to the new Aloha Stadium HART Station, and the rest of the development steps-down the further one travels from the station. The NASED PMP is in agreement for the tallest structures occurring near the station, however the PMP accommodates a larger amount of future density and construction. The areas of largest difference between the plans are in three key spots. First, in the PMP the mauka side of Salt Lake Boulevard is showing 75' of allowable height versus 150' of allowable height in the TOD Plan. The PMP density distribution is meant reduce the density of the development across Salt Lake Blvd. from the single family residential area. The PMP also seeks higher allowable height to the immediate mauka side of the existing stadium, and taller buildings at the southern tip of the Lower Hālawa parking lot as compared to the TOD Plan.

FIGURE 4-3: BUILDING MAXIMUM WITH COMMUNITY BENEFITS

FOR REFERENCE:
Building height maximums from the Halwawa Area TOD Plan

Massing Density

The key massing difference between the NASED PMP and Hālawa Area TOD Plan has to do with total programmatic build-out and where the massing is placed on the site. The NASED PMP proposes a higher degree of development on the mauka side of the stadium site while the Hālawa TOD Plan proposes more development concentrated around the new Aloha Stadium HART Station. The essence of the two plans are in agreement, because both recognize that the highest amount (and most likely first phases) of development will occur adjacent to the new HART station. Due to that agreement and likelihood that the first phases of the NASED development will be built closest to the HART station, future changes to the height map within the Hālawa TOD Plan could be discussed once the market proves itself after the initial success of the NASED.



Land Use

Land use is an important topic to settle due to specific zoning requirements depending on the program within the NASED site. Specifically, the topic of a hotel was discussed within the proposed BMX-3 zoning from the Hālawa Area TOD Plan. The BMX-3 zoning only allows limited-service hotels rather than full-service hotels such as those at Waikiki. A limited-service hotel would also be required to keep commercial development (such as restaurants and shops) separate from the hotel building. While the potential specific hotel tenants have not been identified, DPP indicated that there are other possible methods for including full-service hotels within the TOD Special District area.

DPP indicated that there has been interest in full-service hotels in other TOD areas, so there is an option to introduce full-service hotels as being included within the TOD Plan.

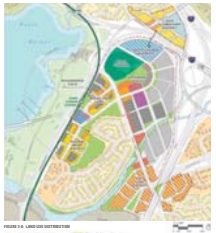
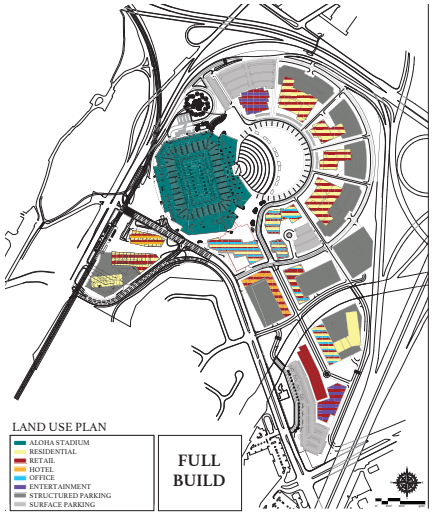


FIGURE 3-6: LAND USE DISTRIBUTION

FIGURE 3-5: PROPOSED ZONING DESIGNATIONS



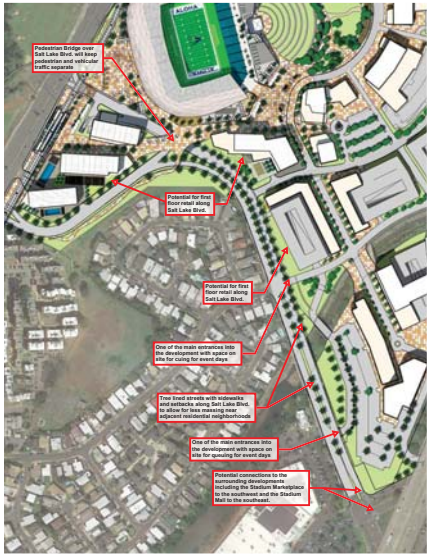
Salt Lake Blvd. Treatment

The NASED PMP treats Salt Lake Boulevard differently than what is indicated in the Hālawa Area TOD Plan. In the NASED PMP, the allowed height of buildings on the mauka side of Salt Lake Boulevard was reduced, and efforts were taken to reduce the amount of active development occurring along the boulevard due to the across-the-street residential neighbors. The Hālawa Area TOD Plan takes a different approach by promoting commercial mixed-use activity (street-level retail) along Salt Lake Boulevard to provide amenities for the substantial existing pedestrian traffic that uses the boulevard daily.

While the NASED PMP and Hālawa Area TOD Plan are 'programmatic' in nature, the city has clearly indicated their desire to have a higher degree of activation along Salt Lake Boulevard. The specific discussions regarding land use in this area should be accounted for in the developer-team design schemes.

FIGURE 3-12: VEHICULAR CIRCULATION

- Freeway (±6 lanes)
- Urban Arterial (±6 lanes)
- Urban Collector (±4 lanes)
- Local Road (±2 lanes)
- Restricted Road (±2 lanes)
- Freeway Ramp (±2 lanes)
- New Roads
- One Way Road
- Existing Salt Lake Boulevard Alignment
- Existing Significant Intersection
- Modified Significant Intersection
- New Significant Intersection
- Gate



Building Orientation

The parcel of NASED adjacent to the new Aloha Stadium HART Station is recognized in both the TOD Plan and NASED PMP as being the area of highest density for the development. With high density and increased building height comes the need for careful planning regarding the orientation and views of the buildings. Sensitive areas, such as Joint Base Pearl Harbor Hickham across Kamehameha Hwy, need to be considered when tall buildings are constructed. Viewsheds to and from neighboring areas, as well as the user experience as visitors pass through the site is all being considered. The Hālawa TOD Plan seeks to reduce the 'canyon effect' which is created when tall buildings are built close together, giving users the experience of being at the bottom of a tall canyon. The NASED PMP seeks to create an example of a viable design for mixed-use construction while assisting with wayfinding relating to the overall development. While the amount and distribution of eventual density on the HART parcel of the NASED development will be determined in the future, developer design teams should carefully consider avoiding creating a canyon-effect on the parcel.

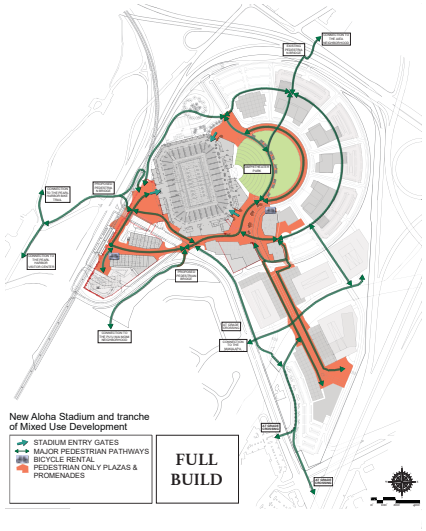
Additionally, the Hālawa Area TOD Plan seeks to create a more appealing arrival gateway than is currently shown in the NASED PMP by incorporating more public spaces, plantings, and Complete Streets features. DPP's input on this topic is a fair point, and it will be the responsibility of developer design teams to design and construct an arrival gateway for NASED with adequate placemaking elements.

Building orientation adjacent to the new Aloha Stadium HART Station needs to consider potential security recommendations from the US Navy. The tallest buildings in the NASED development are slated to occur across the street from Joint Base Pearl Harbor Hickham. Views from residential towers which overlook the active military base will need a thorough national security review from the Navy to ensure they do not present any risks. When the Navy finalizes their security recommendations the NASED team will integrate the information into requirements design teams must consider for future construction.

Connections to Adjacent Neighborhoods

There are several points of difference between the NASED PMP conceptual design and the Hālawa Area TOD Plan in relation to pedestrian-friendly connections with adjacent neighborhoods. The TOD Plan includes additional areas which are not included in the NASED PMP (Aiea Elementary School, Pu'uwai Momi, Stadium Marketplace, and Stadium Mall), so while the PMP may not show full pedestrian connections into those areas it does not mean that should not be the intention of priority-listed respondent design teams. Successful future construction phases of NASED will relate to each other over time, so while the NASED PMP may show pedestrian connections that do not push as far into adjacent areas as the Hālawa TOD Plan, the full intention of maximum multi-modal connectivity should always be the goal of design teams. The NASED development will be an iterative construction process, and additional step of construction and program that is added to the district should only serve to further enhance the pedestrian connection aspirations of the Hālawa Area TOD Plan.

FIGURE 3-10: URBAN DESIGN ELEMENTS



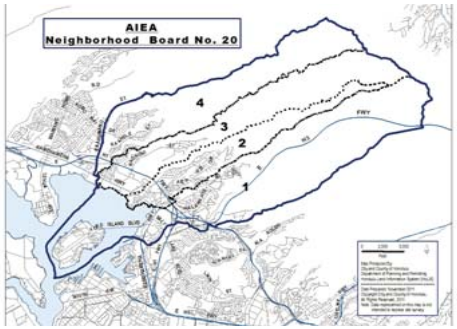
Community Benefits

The community benefits discussion with DPP will be the keys to unlocking the full building height and density potential of the development. Conversations between the NASED team and DPP do not delve into a granular level of detail which would quantitatively compare provided community benefits against allowable increases in building height. However, the developer design team will need to ensure that the community benefits provided throughout the development merit the bonuses being sought.

The discussion with DPP regarding community benefits and NASED focused on the amphitheater. Specifically, to achieve a height bonus for a building there must be a particular trade being made. For example, if the final NASED designs provided a certain square-footage of parks and recreational options for NASED inhabitants then residential towers could qualify for height bonuses. The amphitheater introduces a type of community benefit which is atypical for achieving height bonuses, by providing what may end up being an excessive amount of 'bonus', more so than can readily be used due to height restrictions. Due to this, discussions between DPP and future design teams may investigate the idea of 'banking' community benefits for later use. If the amphitheater were to provide the requisite square footage of community benefits to provide the entire NASED development with maximum height benefits then it would behoove the developer to discuss the topic with DPP in case a deal could be reached.

Additional community benefits include, but are not limited to:

- Recreational areas including parks and open spaces (which could include an amphitheater) as well as bike and pedestrian pathways
- Educational areas
- Cultural amenities
- Community center
- Multi-modal improvements and streetscape enhancements
- Infrastructure upgrades
- Area(s) for large scale events such as the Swap Meet and 50th State Fair



CULTURAL AND COMMUNITY HISTORY

In an effort to enhance connectivity between the communities surrounding Hālawa, this Plan embraces the histories, stories, and traditions of a larger surrounding community – specifically the surrounding areas of ʻAiea, Salt Lake, Āliamanu, and Foster Village. The two neighborhood boards with jurisdiction over NASED are Neighborhood Board No. 18 (Salt Lake / Āliamanu / Foster Village) and No. 20 (ʻAiea). During the project team's regular attendance at these board members, it was repeatedly emphasized by both the neighborhood board members and community that planning, design, and construction of the new Aloha Stadium and NASED generally needed to take into careful consideration the needs of these communities.

These communities also emphasized the importance of recognizing and celebrating the histories of these areas. This island region has a complex and fascinating history, from early traditional Hawaiian history, through the 19th and 20th centuries when plantations dominated the local economy, to a globally known 20th century military history which includes the bombing of Pearl Harbor and the area's role in World War II. There is perhaps no location in Hawai'i where the islands' widely varied histories and cultures intersect more.

NASED has an incredible opportunity to be a physical manifestation of the gatherings of these histories and cultures. Through its development, connectivity, and intersections, the District can serve as a meeting place, a learning hub, and an opportunity to celebrate our extraordinary histories while charting a course for a single sustainable and prosperous future.

Traditional (Pre-Contact) History

Located in the traditional moku (district) of ʻEwa on the Island of Oʻahu, the NASED area is located primarily within the ahupuaʻa of Hālawa, with a small portion of its northern boundary extending into the ʻAiea ahupuaʻa. The Moanalua ahupuaʻa is adjacent to Hālawa on the south. Numerous moʻolelo, traditional stories, are known about this region and its ahupuaʻa. It is a particularly storied cultural landscape. The table below represents a small selection of the many inoa ʻāina (place names) that are located in the project area and surrounding cultural landscapes.

Inoa ʻĀina	Description and Significance
Āliamanu	Still known as Āliamanu, this crater is located in the Moanalua ahupuaʻa near Salt Lake
Āliapaʻakai	Known today as Salt Lake, this crater and community is located near Āliamanu in the Moanalua ahupuaʻa
Kaloʻiʻili	Located in Hālawa, this land, located within the District, was the site of loʻi kalo, a field and house lot associated with Land Commission Award Number 2156 (Opumui Claimant).
Kapuaʻikāula	Located in Hālawa, this is a coastal site where the bodies of sharks were tossed during a battle between the sharks of Puʻuloa and Keli'ikauaoka'ū. Kapuaʻikāula is a canoe landing and marks the narrowest point in the channel between Hālawa and Puʻuloa, for the entry to Ke Awa Lau o Puʻuloa (Pearl Harbor). Cited in traditions and historical accounts.
Keanapuaʻa	Site of a fishpond in Hālawa made by Kāne and Kanaloa. Also, a famous cave on the coastal point, and resting place of the demigod, Kamapuaʻa. The cave was later used by fishermen as a shelter. Cited in the traditions of Kamapuaʻa and Ka Loea Kalaiaina (1899-1900).
Komoawa (Kamoawa)	This site in Hālawa is named for a guardian shark who was the watchman or keeper of the gate into Ke Awalau o Puʻuloa. He lived in the cave called Keʻaʻaliʻi and kept man-eating sharks out of the region. Also Identified as being the estuary channel leading into the eastern section of Ke awa lau o Puʻuloa. Now known as the "Hālawa Branch." Cited in Saturday Press, Dec. 29, 1883; and in Ka Loea Kalaiaina (1899-1900).
Kumumaʻu	Hālawa-Moanalua boundary zone. Situated on the former shoreline, just above the place called Pālani. Cited in the tradition of Puhi o Laumeki. A named locality cited in project area claims of the Māhele.
Makalapa	An ancient crater perched above the Hālawa coastal flats.
Nāpēhā	The western end of Leiolono in Hālawa, and a place where spirits of the dead would be encouraged to pass through by their ʻaumākua. The spring was named "Leon over" because King Kūali'i leaned over to drink water here (ʻI ʻī, 1959). It is also reported that the spring was guarded by a moʻo (water spirit), as cited in Kamakau.
Wai Kai	Inland fishpond located off Hālawa Stream within the District.
Wai Kūʻohoʻi	Inland fishpond located off Hālawa Stream within the District.
Wailolokai	A marshy area on the Hālawa coastal flats.

Artwork by John Prime

Significant Moʻolelo

As with the area place names, there are numerous moʻolelo or stories of this cultural landscape. These moʻolelo provided are only a small sample of the rich traditional histories of this area, which tell of the extraordinary lives and works of akua (gods) and aliʻi (chiefs).

Pele and Hiʻiakaikapoliopele Travel to Oʻahu from Kauaʻi

Hawaiians have numerous origin stories: some are cosmologies, like the Kumulipo; others are migration stories, like Kumuhonua. The origin story associated with Pele is one of the most known and celebrated of the migration stories. This origin story recalls Pele's migration from Tahiti to Hawaiʻi. Pele had many sisters, but her most known and beloved was Hiʻiakaikapoliopele (Hiʻiaka in the embrace of Pele, also known as Hiʻiaka). There are many stories of their journeys and adventures throughout the islands.

One tale recounts their travels throughout the islands, particularly their time on Kauaʻi and then their move to Oʻahu. It is said that when Pele and Hiʻiaka left Kauai, then brought with them a bird (manu) and salt (paʻakai). As omnipotent beings, they are depicted as grand creatures with the ability to leap from island to island. When they landed on Oʻahu, near where NASED is located today, their landings created two depressions in the land. It was at these landings spots that they left the bird and salt they brought over from Kauaʻi with them. The two craters that remain today are the depressions Pele and Hiʻiaka left behind, and the two places would be known as Āliamanu, salt-crusted place of the bird, and Āliapaʻakai, salt lake.

Alahula Puʻuloa, he Alahele na Kaʻahupāhau (The Swimming Trails of Puʻuloa [Pearl Harbor] are the Trails Traveled by Kaʻahupāhau)

In 1870, Kamakau wrote about several practices and beliefs pertaining to manō (sharks) in ancient life. One practice of note in the Puʻuloa region was the practice of transforming deceased family members into manō as ʻaumakua (family gods/guardians). These family ʻaumakua would help its relatives when in danger on the sea—if a canoe capsized or a man-eating shark was threatening attack. Hawaiians also worked with and tamed sharks so that one could ride them like a horse, steering them to where one wished to go (Kamakau, 1976; Pukui, translator). Kupuna Mary Kawena Pukui shared that there were two basic classes of sharks — manō kānaka (sharks with human affiliations) and manō iʻa (wild sharks of the sea–man eaters). The manō kānaka were revered and cared for, while the manō iʻa were at times hunted and killed following ceremonial observances (1976, M.K. Pukui, pers. comm.). The practice of chiefs hunting sharks using the flesh defeated enemies or sacrificial victims as kūpalu manō (shark fishing chum), and of commoners using rotted fish as kūpalu manō are further described in several historical narratives.

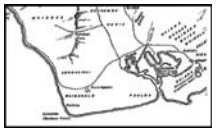
Ke Awalau o Puʻuloa are famed in traditional and historical accounts of manō. The traditions center around the several deified sharks, foremost of whom is the goddess, Kaʻahupāhau, then followed several others, including but not limited to Kahiʻukā, Kūhaimoana, Komoawa, Kaleiuikimanōopuʻuloa, Keliʻikau-o-Kuʻū (Kealiikauaokaʻū) and Mikololou. With the exception of Mikololou, all these shark gods were friendly to people, and dedicated to keeping manō iʻa out of the Puʻuloa–ʻEwa waters and protecting people.

Traditions of Ke Awalau o Puʻuloa tell us that one of the most important kānāwai (laws) governing manō was that they would not attack humans. This kānāwai was created by the shark gods themselves. Kamakau (1870) wrote about the establishment of this kānāwai stating that:

> *"Oʻahu was made a kapu land by this kanawai placed by [the shark gods] Kanohunamoku and Kamohali'i. But their sister Kaʻahupahau broke the law and devoured the chiefess Papio. She was taken and "tried" (hoʻokolokolo) at Uluka'a [the realm of these gods], but she escaped the punishment of death. It was her woman kahu who paid the penalty of the law because it was her fault—she reviled Papio. The trouble arose over a papahi lei of ʻIlima flowers which belonged to Kaʻahupahau that her kahu was wearing. [The kahu refused to give it to Papio, and] Papio said, "I am going bathing, but when I come back you shall be burned with fire." But Kaʻahupahau devoured Papio before she could carry out her threat, and she was punished for this. That is how Puʻuloa became a [safe] thoroughfare (alahula). After her confinement ended several years later, Kaʻahupahau was very weak. She went on a sightseeing trip, got into trouble, and was almost killed. But she received great help from Kupiapia and Laukahiʻu, sons of Kuhaimoana, and when their enemies were all slain, the kanawai was firmly established. This law—that no shark must bite or attempt to eat a person in Oahu waters—is well known from Puʻuloa to the Ewas. Anyone who doubts my words must be a muliktini there. Only in recent times have sharks been known to bite people in Oahu waters or to have devoured them; it was not so in old times"*
>
> **— Kamakau, 1964:73; Pukui, translator**

Trails and Storied Places of the ʻEwa District (1805-1811)

Later in his series of articles, ʻI ʻī (1959) described the system of trails that had been used during his youth, also recalling note places associated with the trails. Excerpt from the ʻEwa District include the following history (Figure 10):

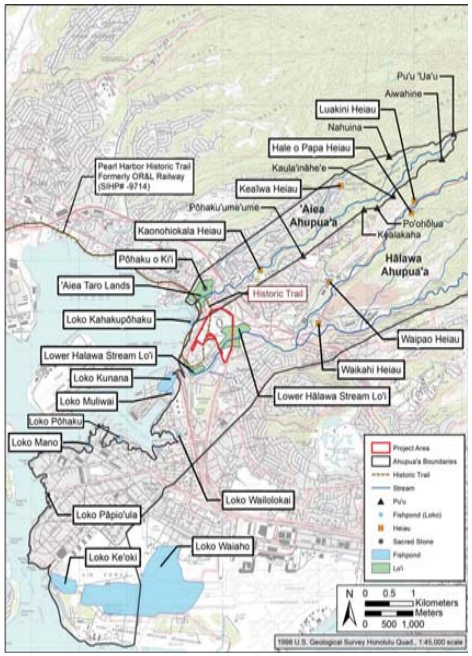


Trails from Honolulu to ʻEwa

> *...Let us turn to look at the trail going to Ewa from Kikihale, up to Lehe, to Koiuiu and on to Konroula. There were no houses there, only a plain. It was there that the boy Ii and his attendants, coming from Ewa, met with the god Kaili and its attendants who were going to Hoaeae. When the kapu moe was proclaimed, they all prostrated themselves on the plain until the god and his attendants passed by.*
>
> *When the trail reached a certain bridge, it began going along the banks of taro patches, up to the other side of Kapalama, to the plain of Kaiwiula; on to the taro patches of Kalihi; down to the stream and up to the other side; down into Kahauiki and up to the other side; turned right to the houses of the Portuguese people; along the plain to Kauwalua [at Moanalua], Kalaikoa's house of bones; down to a coconut grove and along the taro patches of Kahohonu; over to the other side, and from there to a forded stream and up to Kapapakolea, an established resting place for travelers.*

The trail began again on the opposite side of the pool and went to the lowland of Hālawa, on to Kauwamoa, a diving place and a much-liked gathering place. It was said to be the diving place of Peapea, son of Kamehamehanui of Maui who was swift in running and leaping. The place from which he dove into the water was 5 to 10 fathoms above the pool.

There the trail led to the taro patches in Aiea and up the plain of Kukiiahu.



Post-Contact Cultural History

In traditional times, ala hele and ala loa (trails and major thoroughfares) were accessed by foot. The arrival of Westerners and introduction of hooved animals led to developing new modes of travel and transporting of goods. By 1847, King Kamehameha III enacted the laws of the Alanui Aupuni (Kingdom/Government Roads). Many of these Alanui Aupuni were laid over the ancient system of trails. Only in instances when a more direct route could be developed (say by installing a bridge), were the early government roads realigned from the original trails. Throughout the 1800s many trails fell from use because of the steady decline in the native population, changes in land use practices—the blocking of maukamakai accesses as large ranching and plantation interests developed, and the consolidation of population centers evolved. Several native traditions and early historical accounts cited earlier in this study provide details of the routes traveled through 'Ewa. Reports from 1858 and 1859 provide notes on changes to the trails and government roads passing through the 'Ewa District.

In the 1830s, lands of the 'Ewa District were being turned over to grazing of sheep, cattle, pigs and horses, with both landed natives and foreigners holding herds across the district. A few native land owners like John Papa Ī ī (at Waipi'o) and Mataio Kekūanaō'a held title to large tracts of land, and they, along with growing numbers of foreign residents—like Joseph Remond and Louis Bernard, who in 1856 were granted nearly 1,500 acres of land in Mānana—vied for access to land, water and fisheries. With the intrusion of grazing animals, the hoa'āina (native tenants) were challenged to maintain their traditional and customary accesses and cultivated fields. As documented in notable cases from the 'Ewa District, such as Haalelea vs. Montgomery (1852), where fishery rights were disputed, and Oni vs. Meek (1858) where traditional and customary access to land was blocked—conflicts began early, and as is seen through history, land and residency/subsistence practices quickly changed.

By the late 1840s, James Robinson & Company maintained herds of cattle and other livestock on Hō'ae'ae and several neighboring ahupua'a. Their operations later came to include business operations in partnership with the Ī ī heirs on Waipi'o. In 1847, it was announced that a new butcher shop had been opened, which could

supply parties with "the best Beef the island affords" (The Polynesian, 1847:3). The native residents couldn't compete with individuals like Lewis Rees, Samuel Thompson, John Meek, James Robinson & Co., Joseph Remond, Louis Bernard, James Dowsett, Samuel Allen, J.R. Williams and James Campbell. By the 1860s, large tracts of land in from Moanalua to Kalauao, and across the 'Ewa District were used for ranching operations. Joseph Remond (or Raymond) and Louis Bernard worked lands of the Waimalu-Kalauao vicinity, and J.R. Williams worked lands for both cattle and sugar between Hālawa and Waimalu (The Pacific Commercial Advertiser, 1868). By 1877, James Campbell controlled nearly all of Honouliuli and held fee-simple or leasehold interest in other lands across the 'Ewa District and beyond. His focus was ranching, but in 1879 he developed the first artesian well, and the possibilities of accessing water led a movement across the district towards land development and sugar plantations. At the same time, James Dowsett controlled lands from Kahauiki to Kalauao (in fee or leasehold title), and grazed cattle for the market trade.

In addition to ranching as an economic driver, other business included supplying fish, salt and kalo to the Honolulu market. By the early 1850s, the demand for laborers to work on plantations, along with the alarming decline of the native population, led members of the Royal Hawaiian Agricultural Society to advocate for the importation of Chinese labor (The Polynesian, 1850:2). By August 1851, a group of 200 Chinese "Coolies" were requested with groups of men being assigned to various plantations.

One of the businesses to immerge on the landscape of 'Ewa was the cultivation of rice. By the 1820, rice grown in both America and Asia was used as a staple in the diet of foreign residents of Hawai'i. In 1858, the Royal Hawaiian Agricultural Society engaged in experiments in rice cultivation on their farm lot at Kaimuohena in Nu'uanu Valley. In 1859, Society farm manage reported:

> *"[rice was] now growing luxuriantly in some of the hitherto waste and unseemly kalo patched by the river side. Already a crop has ripened and yielded largely, and when all the kalo land [on the farm parcel] shall have been reclaimed and planted with rice, we calculate an annual yield of some 40,000 pounds..."*
>
> **— The Pacific Commercial Advertiser, 1859:1**

It further suggested that rice was one of the most important plants being cultivated. It was later reported that H. Holstein, garden manager had sent —

> *"...a sample of the new crop of rice raised in the above garden. The rice is small in size, but clean in appearance and well formed. Its hue is little dark at present... Mr. Holstein demonstrates, by actual experience, that the common taro lands will grow three crops of rice a year, yielding together 12,000 pounds of rice to an acre, equivalent, according to market value at home, to from five to six hundred dollars per acre—at an expense of only $15 per acre..."*
>
> **— The Polynesian, 1859b:2**

While few acted on the crop in the late 1850s, within a couple years, the Carolina variety of rice grew in popularity and began to fill in lo'i kalo. In July 1861, it was reported that interest in rice cultivation was growing. Dr. S.P. Ford grew rice in Moanalua and within a few years, the success of Ford's experiment led to expanding rice fields in lo'i across the irrigated lands of the Kalauao-'Aiea vicinity.

Large tracts of kalo land (both fallow and in cultivation) were turned over to rice, but within the first few years, the excitement of "fast money" waned and the market settled down. During the 1860s, rice was second only to sugar in export, but as the island immigrant population grew to provide labor for the sugar plantations, consumption in the islands soon matched the export volume (Kuykendall, 1953:250-251).

In 1876, King Kalākaua and his little kingdom were forced into a trade agreement with the United States. The trade agreement was pushed along by island businessmen and American interests. Known as the "Reciprocity Treaty," it opened the 'Ewa District to large scale rice and sugar plantation development, while giving the United States free access to Pearl Harbor. The lands of 'Ewa were deemed of economic value in the development of both sugar and rice fields. In the 1877 article below, one such development at Waimano is described and the author also observes that rice is planted from Hālawa to Honouliuli while suggesting that kalo, "the mother food" of Hawaiians, will someday not be seen upon the land.

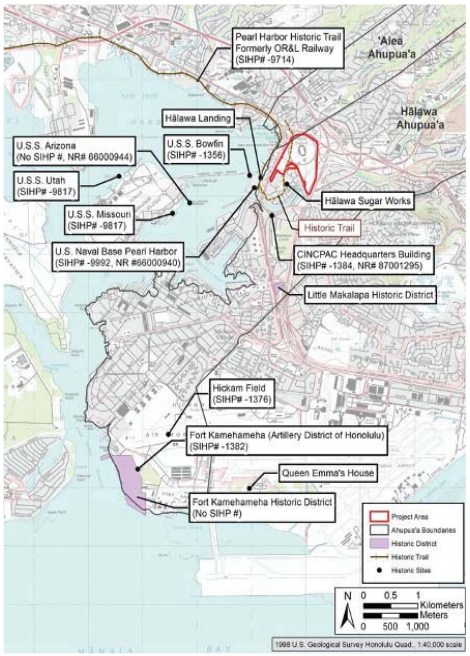
Military History

The following information was provided by the United States Navy as a brief history of the prior site usage by the Navy in the lead up and aftermath of World War II.

Navy site usage:

The Navy already had plans for expansion in the Pacific during the lead up to WWII. Admiral Hepburn and ADM Richardson implemented 'Plan Orange' in 1938, but infrastructure and expansion plans prepared under Fleet Exercises started decades earlier. The Navy began to acquire the land around Pearl Harbor between 1938-40. Leases were acquired from the Bishop, Queen Emma, and Damon Estates which were mostly sugarcane and agricultural lands for Aiea Plantation. The Navy completed land acquisition for the construction of five housing areas by 1939.

Funding for infrastructure upgrades in the area started as soon as FDR was elected. Roosevelt immediately used Recovery Act funds to start upgrading key infrastructure such as the roads and bridges around Pearl Harbor, and to create a connection to Honolulu Harbor. This included the design in 1933 for Kamehameha Highway, Hālawa Gateway Bridge and bridges at all streams around PH in the first phase of construction completed in 1935. FDR visited this area during his Oahu motorcade tour. FDR assigned CAPT Morrell to kick-off the expansion efforts at Pearl Harbor Naval Base & Navy Yard and designated him PWD in 1938 for Pearl Harbor and Outlying Areas including Midway, Wake, Palmyra. CAPT Morrell, later ADM, and before becoming "King Seabee" was responsible for the award of a major national contract named: Contractors Pacific Naval Air Bases Contract (CPNAB). The majority of all construction for the WWII Middle Pacific build-up zone including the Pearl Harbor expansion of housing (including Makalapa) was done through this large consortium of national recognized Contractors under a fixed fee cost-plus contract. The contractor for work done on the Aloha Stadium site was most likely Morrison Knudsen with C.W. Dickey as the local Architect/Project



Manager for most of the housing areas. Construction was mostly wooden temporary barracks and Quonset huts.

The Pearl Harbor expansion plan included five Housing areas to support the build-up for war and transitory housing needs at Pearl Harbor. The estimated projected number of housing units in the expansion plan was around 25,000 units. The specific Aloha Stadium site being looked at was for transitory housing (barracks) for Navy Enlisted personnel and considered a temporary WWII Cantonment.

The drawdown in the Pacific was slower than expected. The best estimate by the Navy is that the Aiea Cantonment area was turned over to the State in the early 1950's and it was most likely used as Low-Income Housing up until the 1970's when Aloha Stadium was constructed. Prior to the time of Aloha Stadium there was the Nimitz Bowl created on part of the site to keep the troops entertained during the war with various events.

Environmental Issues:

The major environment clean-up site within the future NASED development was for the former large WWII Laundry and Dry-Cleaning facility just north of H-1. The facility was demolished in the late 1990's. The Navy believes there were also several smaller clean-up efforts of small underground storage tanks. This site did have underground tunnels, underpasses and bomb shelters for personnel which may still remain buried.

Ongoing Discussions with the Navy:

The NASED team has engaged on several occasions with US Navy personnel to both inform and discuss the development. Discussions with the Navy involve alleviating possible security concerns due to tall structures near an active military base, and the mutually beneficial amenities of the NASED development

Figure 1
AERIAL PHOTOGRAPH SITE MAP
Scale: 1 inch = Approximately 200 feet

of which Navy personnel would also benefit.

The Makalapa HART Station to the immediate south of the Aloha Stadium HART Station will be the eventual site of a new development being proposed by the Navy. Synergies between the two developments can be explored due to the strong transit connections and TOD principles. Workers from the Pearl Harbor shipyards could ride the HART line north and eat lunch at a NASED restaurant. Transit connections and having a 'good neighbor' relationship with the Navy will only serve to strengthen the overall development.

Additional connections between the NASED development and Navy amenities are being explored. The Navy has indicated the possibility of moving the current fence along Kamehameha Hwy makai of its current location to allow for the construction of a bicycle connection which could integrate a connection with NASED while continuing south to include the Pearl Harbor Visitor center. These discussions are preliminary and ongoing, but there is the potential to bring multiple key stakeholder groups together to achieve mutually-beneficial goals and objectives.

A NEW ALOHA STADIUM

Hawai'i's Stadiums as Part of the Community Fabric

Prior to the existing Aloha Stadium, Honolulu Stadium was the only comparable venue that had the ability and capacity to host large scale events. Built in 1926, the Honolulu Stadium was located at the corner of King and Isenberg Streets, the present-day site of what is now known as the Old Stadium Park. Honolulu Stadium was constructed entirely out of wood, and had the capacity to hold approximately 25,000 spectators (Suehiro, 1995).

However, in the late 1960's, escalating issues with the Honolulu Stadium, which had by then earned the moniker "Termite Palace", prompted efforts to identify a site for the development of a new stadium that would provide adequate space for a larger facility. Once Aloha Stadium opened in 1975, Honolulu Stadium was decommissioned and subsequently demolished in 1976.

The Aloha Stadium

Aloha Stadium first opened in 1975, at a construction cost of $37 million. It has formed a centerpiece of sports and entertainment within Hawai'i since its opening. The Stadium and its surrounding lands are owned by the State under the carriage of the Stadium Authority which is also responsible for operating and maintaining the facility.

Located on the southern coastal plain of O'ahu, Aloha Stadium is Hawai'i's largest outdoor arena and hosts over 300 events each year including professional sporting events, college football games (University of Hawai'i (UH) regular season home games and the post season Hawai'i Bowl), multiple high school sporting events, concerts, fundraisers, the Aloha Stadium Swap Meet & Marketplace, and the 50th State Fair.

The Stadium's mission is to, "meet the challenge of providing a first class arena where the dreams of our young people can be realized through participation in sporting and other special events; where the spirit of achievement can be nourished by the thrill of competition; where families can gather to share their cultural diversity with pride and a feeling of Aloha."

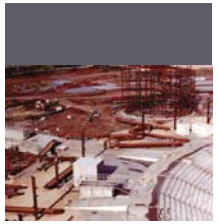
Aloha Stadium Timeline: 50 Years of Aloha

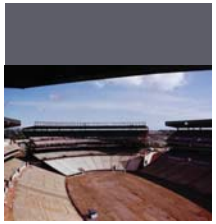
THE 70'S

September 13, 1975	*Crowd of 32,247 come to support UH against Texas AE-1 for the stadium's first season opener.*
1975	*The San Diego Padres play an exhibition series against the seibu lions of Japan's Pacific League.*
April 1976	*The Hawaiians play Jacksonville in the very first professional football game. Soccer star Pele and New York Cosmos lure 21,705 for victory over Team Japan*
August 21, 1976	*The first NFL Exhibition Game featuring San Francisco's 49ers defeat the San Diego Chargers 17-16 before a crowd of 36,364 fans*
1976	*The Honolulu Jaycees bring the 50th State Fair to the stadium*
December 1976	*Kalapana and CE-K end the year with a great concert*
1977	*Team Hawaii joins the North American Soccer League and makes the Aloha Stadium home*
December 1978	*First sellout crowd of 48,767 viewers watch eventual national champion USC defeat UH 21-5*
May 1979	*18,348 fans come out to support UH's Derek Tatsuno as he strikes out 12 in an 11-1 victory over Nevada Las Vegas.*
Summer 1979	*The Aloha Flea Market opens, becoming the largest operation of its kind in the state. Highlighting Concerts: Santana, Boston, CE-K, The Beach Boys, Heart, the Eagles.*

In 2005, DAGS commissioned a planning study that identified several deficiencies of various degrees with respect to Aloha Stadium, as well as a number of items that required attention to protect public safety. The stadium deficiencies included deteriorated areas and corrosion of the stadium, structural issues, replacement of seats and other stadium equipment, non-compliant code conditions, and considerable maintenance costs. The study highlighted the urgency of systemic problems that were continuing to grow as a result of deferred maintenance and chronic corrosive conditions.

In 2017, an update to the aforementioned 2005 planning study concluded that the existing stadium requires approximately $300 million in critical health and safety repairs as well as $121 million of additional improvements to bring the stadium up to ADA standards and code compliance. The cost of these needed repairs and improvements is estimated to grow at a rate of approximately 5% per year, meaning that from a funding standpoint, $30 million of annual contributions would be required over a 25-year span. Since 2008, the State has spent approximately $117 million towards maintaining the existing stadium, a figure which includes on-going maintenance efforts. Nonetheless, this capital expenditure has not adequately addressed all of the existing stadium's deficiencies. Due to corrosion damage and associated costs that continue to escalate, the State has determined that the construction of a new stadium would present a much more favorable use of capital resources than the continued maintenance of the existing stadium.





THE 80'S

January 1980	*First of 34 NFL Pro Bowl games to be hosted at the Aloha Stadium is announced to a crowd of 49,800 (at the 10th annual Pro Bowl)*
November 1980	*The Oahu Prep Bowl game between Iolani and Waianae draws in 31,484—the largest crowd to watch a high school football game in Hawaii.*
March 1981	*Andy Ganigan scores third round TKO over Manuel Abedoy in co-main event of CBS nationally televised boxing card*
November 1982	*Stevie Wonder performs*
December 1982	*Aloha Bowl debuts with Washington in a 21-20 victory over Maryland*
February 25, 1984	*The Police hold their farewell concert with over 32,000 fans, making it one of the largest concert crowds to fill the Aloha Stadium*
December 1984	*A truck and tractor pull event, the Hawaii Super Pull, makes its debut and becomes an instant hit*
March 1985	*Olympian Duncan Macdonald wins the first Great Aloha Run*
1985	*Superdog Mudracing comes to the stadium*
July 1986	*Frank Sinatra pulls in over 25,000 concert-goers*
August 1987	*Hawaii Islanders play their final season in stadium before moving to Colorado Springs, CO*
June 1989	*Robbie Knievel crashes in motorcycle event*
August 1989	*Superbowl of Wheels, featuring motorcycle, cars, bikes, and skateboarding, holds its inaugural event*
December 1989	*UH makes first NCAS bowl appearance in 33-13 Aloha Bowl loss to Michigan State*

Existing Stadium Conditions and the need for a replacement

The deteriorating structural conditions of the existing Aloha Stadium require near-immediate action and remediation. The weathering steel used in the original construction of the stadium was originally intended to develop a 'rust patina' which would build over time and prevent corrosion. Ultimately, within a short period of time after the completion of Aloha Stadium in the mid-1970s it became apparent that the weathering steel continued to corrode well past what was originally intended. The warm salt-laden environment of Oahu and the close proximity of the Stadium to the salt waters of Pearl Harbor have continuously deteriorated the structure of the stadium.

The nature of the corrosion of the weathering steel has meant that many high-intensity remediation efforts have had to be undertaken for decades. Concourse decking replacement, pedestrian circulation ramp demolition and replacement, repeated applications of anti-corrosive paints, and the continuous replacement of connection hardware has done little to slow the deterioration of the structure due to the near-entire use of the weathering steel for every structural component of the building. Many of these efforts have had to occur repeatedly, such as the application of anti-corrosive paint in attempts to prevent future corrosion.

The unique capabilities of the existing Aloha Stadium to convert from a football to a baseball configuration creates additional issues with repairing the structure. For example, the structural composition of concourse decking throughout the stadium utilizes a weathering steel decking topped with a thin topical layer of concrete. The structure of the decking was designed to provide strength by relying on the steel decking to support the concrete as a lightweight solution to allow the stadium to move between football and baseball configurations. When the steel below the thin concrete decking has failed, the nature of the existing structure does not allow for alternate structural solutions such as a more traditional 3-4" concrete concourse replacement due to the original structure not having any engineering flexibility to accommodate for additional loads of heartier replacement structural components.

Almost the entire composition of the existing stadium structure is fabricated from weathering steel. Every surface of every structural component must be continuously cleaned and painted to alleviate corrosion, a labor and material intensive and expensive process. At the end of the day, the continuous maintenance of the structure will only serve to slow the degradation of the steel but will never correct the essence of the issue of corrosion. Corrosion will continue to degrade the structure and worsen user experiences while causing substantial safety issues. The increasing cost of corrosion mitigation will continue to rise as both known deferred maintenance issues and future continuous corrosion problems will never go away, and will only become increasingly worse with more time.

THE 90'S

November 6, 1995	*The Eagles bring the Hell Freezes Over Tour to Aloha*
January 3 & 4 1997	*Michael Jackson plays in back to back sellout concerts, with a total attendance of 70,000 over two days*
May 29, 1997	*Whitney Houston's plays at Aloha as part of her Pacific Rim Tour, bringing $1.6 Million in revenue.*
April 1997	*San Diego Padres host regular season series with St. Louis Cardinals that draw 77,412, played as a doubleheader, with the second game broadcasted nationally on ESPN.*
January 1998	*Rolling Stones Bridges to Babylon Tour concert draws more than 55,000*
February 21, 1998	*Mariah Carey ends her Butterfly World Tour*
December 1998	*Air Force defeats Washington 43-25 in inaugural Oahu Bowl game. Game is played two more years before moving to Seattle.*
January 30, 1999	*Janet Jackson's The Velvet Rope Tour comes to Aloha, where the capacity for the show was expanded to 38,000 in order to meet high ticket demand.*
December 1999	*Saint Louis School defeats Kahuku in first state football championship game*

A New Aloha Stadium

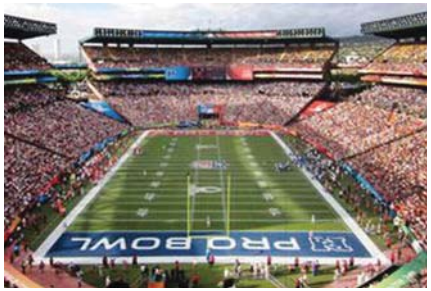
OPPORTUNITIES

Forty years ago, when the stadium was completed, the state-of-the-art facility was the first of its kind to offer four movable sections. Our 50,000-seat stadium could be configured to offer multiple seating configured arrangements and field formations that allowed football, soccer, and baseball.

Aloha Stadium has served as the State's premier entertainment and gathering venue for over forty years without any major upgrades since it was originally constructed. Corrosion of the facility's steel superstructure and commensurate escalating maintenance and repair costs required to retain its structural integrity have prompted the State and Stadium Authority to pursue replacement of the facility, along with the redevelopment of the entire property.

THE 00'S

February 16, 2002	*Janet Jackson's 2nd concert to the islands, All for You Tour was broadcasted on HBO, and was later released on DVD, titled Janet: Live in Hawaii*
December 2002	*Tulane defeats UH 36-28 before 35,513 in inaugural Hawaii Bowl*
December 9, 2006	*U2 plays their final stop on their Vertigo Tour, and their first concert in Hawaii since 1985, generating over $4.4 million in revenue.*
January 2007	*The stadium becomes permanently locked in its football configuration due to issues with the concrete pads lying underneath the mobile seat sections.*
November 2007	*Largest UH crowd (49,651) sees Warriors beat Boise State 39-27 for the school's first out-right conference championship*
December 2007	*Crowd of 49,566 see UH complete unbeaten (12-0) regular season and clinch the Sugar Bowl berth with comeback victory over Washington 35-28*
January 12,2008	*Hula Bowl plays its 25th and last game*
February 2008	*Aloha Stadium hosts the Inaugural Pan-Pacific Championship soccer tournament; involving four teams from Japan's J-League, North America's MLS, and Australia / New Zealand's A-League.*



The State is proposing to construct a new stadium facility along with mixed-use development to create the NASED development. Constructing a replacement facility at the current Aloha Stadium site in Hālawa provides a development opportunity for O'ahu, as well as the State of Hawai'i. Removal of the Federal and City deed restrictions on the project site has redefined the possible land uses and maximum development density of the property, which will attract new investment and create additional community assets through mixed-use development. Catalyzing this opportunity is the future HART Hālawa/Aloha Stadium Transit Station within the project area, which provides a unique opportunity to leverage the increased transit options for stadium operations and for TOD.

The proposed NASED, anchored by the new Aloha Stadium, will continue to serve as a civic focal point and gathering place, aim to increase revenue, and boost economic sustainability. The New Aloha Stadium will continue to host concerts, sporting events, and various community-oriented events while the related mixed-use development in proximity to the New Aloha Stadium will create a vibrant and dynamic mixed-use district.

THE 10'S

2012 *Ziggy Marley Concert, Aloha Stadium hosts the Hawaiian Islands Invitational soccer tournament, a successor to the Pan-Pacific Championship.*

2013 *A rugby league test match is played between Team USA and Samoa, with Samoa claiming a 34-10 victory.*

2014 *US vs Samoa Rugby League Lava Lava Festival*

2017 *The Chainsmokers Concert*

November 2018 *Bruno Mars plays three concerts from his 24K Magic World Tour at Aloha Stadium, generating $12.3 Million in revenue over the course of four days.*

December 2018 *Guns N' Roses stop for a concert on their Not In This Lifetime... reunion tour*

February 2019 *Eminem gives a concert to a crowd of 31,621*

August 2019 *the NFL returns to Aloha Stadium with a preseason game between the Los Angeles Rams and the Dallas Cowboys.*

THE 20'S

2023 / 2024 *First football game held in the New Aloha Stadium*

Goals

2.1

PROJECT VISION

NASED Vision

NASED is a live-work-play-thrive district that celebrates Hawai'i and inspires a feeling of Aloha for the community and visitors alike.

NASED Mission

The NASED Program will deliver a world class and community-centric mixed use district, anchored by a new sports and entertainment venue that catalyzes ongoing successful development of the district for the benefit of the State of Hawai'i.

Program Goals

The goals of the NASED Program are to:

a) Create an inviting destination through the addition of mixed-use developments incorporating entertainment, retail and hospitalities facilities, anchored by an appropriately sized, world class stadium;

b) Heighten the area's use as a community gathering place through the provision of spaces for cultural programs and public events;

c) Maximize district-wide value for money to the State of Hawai'i that is compatible with applicable delivery methods, market demand, economic feasibility and social aspirations;

d) Support a green network and infrastructure through establishing active, open, and community spaces;

e) Create a sustainable and resilient community through technology and design;

f) Promote connectivity between the New Aloha Stadium and the Hālawa / Aloha Stadium HART;

g) Increase accessibility to the site through multimodal connectivity and accessibility;

h) Encourage a variety of lifestyles through residential and housing diversity that may include both housing for residents and accommodations for visitors;

i) Build consensus by promoting community engagement, input and interaction during the planning process; and

j) Create an executable development plan for an urban entertainment destination that is community-centric and appropriate for Hawai'i.

Key Objectives

Ensure that the masterplan developed:

- Considers and responds to the whole of life development and operation of Proposed Action;
- Allows for future flexibility to respond to changing market demands;
- Optimizes economic returns to the State of Hawai'i; and
- Includes mixed-use development and infrastructure improvements that are naturally complementary to New Aloha Stadium.

Deliver a world class stadium that:

- Accommodates exciting and memorable experiences for event patrons;
- Is designed to optimize the event experience, with excellent sightlines to the field, and efficient ancillary service and facility offerings;
- Is truly multipurpose; allowing for efficient reconfiguration, is attractive for touring events and allows for the State of Hawai'i to pursue and successfully attract and host global events;
- Leverages technology and innovation to minimize operational costs and event overlay expenses, thereby creating a digital spectator opportunity; and
- Maximizes potential revenue generation while maximizing operational efficiencies;

Deliver additional development surrounding and supporting the New Aloha Stadium that:

- Is complementary to the operation and economic viability of the New Aloha Stadium itself (e.g., retail, hotel, commercial, residential, and other developments);
- Creates a vibrant, thriving community entertainment district; and
- Encapsulates the vision of the Proposed Action as a full service, mixed-use development mixed-use development that offers a wide range of amenities and facilities to serve the residents of and visitors to the State of Hawai i;

Create a community centered district that:

- Transforms the area into an active environment, with a vibrant mix of land uses that respond to the site and are appropriate for its setting and the State of Hawai'i;
- Is founded on sound urban design and planning principles and is able to adapt and respond to emerging trends;
- Is environmentally sustainable and resilient, financially feasible and operationally efficient; and,
- Accommodates and enhances the attractiveness and viability of the Aloha Stadium Swap Meet;

Ensure that:

- The New Aloha Stadium serves as focal point for the local community, engendering a true sense of pride;
- The Proposed Action characterizes an authentic Hawaiian identity and sense of place for the local community;
- Input from the local community, businesses, stakeholders and government agencies and authorities is sought and, where appropriate, reflected in the planning of the Proposed Action; and
- Strategies that maximize return on investment to the benefit of the public are considered in the planning process;

Maximizes transportation options by:

- Capitalizing on the increased access and transportation opportunities presented by connectivity with the neighboring HART Station; and
- Providing safe, secure connections that link the HART and multi-modal access to the area's major destinations, including adjacent historic sites and activity centers;

Establish Project Management and Oversight that:

- adopt a delivery strategy that is flexible, adaptable and able to respond to financial feasibility and evolving market demand;
- abide by investment and funding decisions that are well-considered and ultimately deliver value for money for the State of Hawai'i;
- • Adopts a delivery strategy that is flexible, adaptable and able to respond to financial feasibility and evolving market demand;
- • Abides by investment and funding decisions that are well-considered and ultimately deliver value to the State of Hawai'i;
- • Complies with and ensures that all applicable State of Hawai i's regulatory laws, including but not limited to HRS 343, Act 50 (2000) and HAR Chapter 11-200.1 are complied with and acted upon in good faith over the course of development.

Program Activities

Create an inviting destination through the addition of retail and entertainment spaces

Increase accessibility to the site through multimodal connectivity and accessibility

Heighten the area's use as a community gathering place through cultural programs and public events

Achieve financial sustainability through efficiency and appropriate economic uses

Support a green network and infrastructure through establishing active, open, and community spaces

Encourage a variety of lifestyles through residential and housing diversity that may include both housing for residents and accommodations for visitors

Improve connectivity between the stadium and rail station

2.2

CREATING A WORLD CLASS DESTINATION

A Better Place through Community Gathering

The community and stakeholder vision for the District imagines the development of a world class destination where peoples from the surrounding neighborhood and around the world can live, work, and play. Throughout the area, all persons would find a wide range of activities and amenities accessible and available to them, including sporting events, music events, retail, residential, community spaces, and cultural activities. The District would attract top-tier events while still offering free opportunities for the community to enjoy.

Throughout the TOD and Master Planning process, community members expressed a strong desire to ensure that the District attracted high quality development and continued to serve as a site for world-class entertainment while also staying accessible to the surrounding community.

The role of community benefits has been a consistent theme throughout all of the public input processes. Therefore, it is critical for the developer to understand community support is largely reliant upon building generous community benefits into the final master plan and design. Some of the more popular ideas for such benefits included pedestrian and bike paths, an outdoor amphitheater, and cultural spaces.

Critical to the success of NASED is designing and developing a district that represents, enhances, and serves the larger community. Aloha Stadium is a resource for all of O'ahu, the State of Hawai'i, and a national and international community. NASED therefore needs to continue to serve as a resource for its existing stakeholders and develop in a manner that provides a range of opportunities to a wider audience, while ensuring that the adjacent communities are not adversely impacted by the development of the larger district.

Far more than simply a stadium, Aloha Stadium has served as a gathering place for all of Hawai'i since its opening in 1974. NASED is the next evolution of this gathering place. The events on the following pages (both at and away from the stadium) demonstrate the strong sense of community and cultural importance of public gathering which NASED will seek to emulate.

Cultural Programs and Public Events

Great Aloha Run

The 8.15 mile Great Aloha Run (GAR), Hawaii's largest participatory race, has been an Oahu tradition for the past thirty six years. Every year thousands of people participate in the GAR which starts at Aloha Tower in downtown Honolulu and finishes in the Aloha Stadium.

50th State Fair

The 50th State Fair is one of the largest annual events in the state and provides affordable entertainment for Hawaii's families. Each year the Fair takes place over four weekends between May and June in the Aloha Stadium parking lot.

Chinese New Year

Prominently held in Chinatown, Honolulu. The Chinese-Hawaiian community remains an important contributor to local culture and livelihood. With this in mind, Chinese New Year is a large and lively celebration in Honolulu. Festivities often include the Narcissus Queen Pageant, Narcissus Festival and Lion Dances, and the Night in Chinatown Street Festival.

The Honolulu Festival

A three-day festival held in Waikiki to celebrate and promote understanding of the vibrant mix of Asia, Pacific, and Hawaiian cultures present within the region. Festivities include the Grand Parade, Nagaoka Fireworks display, a variety of cultural dance and music performances, a craft fair and exhibition, the Governor's Luncheon Reception, Ennichi, the Friendship Gala and Party, educational programs, and food festivals.

The Merrie Monarch Festival

A week-long festival held in the town of Hilo on the island of Hawai'i, the Merrie Monarch Festival has been a springtime tradition since 1963. Created in honor of King David Kalakaua, the festival preserves and promotes Hawaiian culture and the art of hula through festivities, including arts fairs, cultural demonstrations, musical performances, the Merrie Monarch parade, and the world renowned three-day hula competition.

Lei Day

A statewide celebration, May Day is Lei Day in Hawaii, and it is accompanied by a variety of events; the largest of which is the Lei Day Celebration held in Waikiki. Festivities often include live musical performances, a lei contest, hula, demonstrations, food festivals, craft vendors, and parades.

Mele Mei

Every spring, Honolulu hosts a month-long celebration of Hawaiian music. Mele Mei features an abundance of performances and workshops that celebrate the rich history and storytelling of Hawaii's traditional and contemporary music. The festivities are highlighted by the Nā Hōkū Hanohano Award ceremony, honoring the achievements of Hawaiian artists.

Lantern Floating Festival

Each Memorial Day is highlighted by the traditional Lantern Floating Ceremony, a tradition held in remembrance and honor of those who have given their lives in service. Participants launch specially crafted lanterns, inscribed by hand with prayer messages, off the shore and into the gentle waves of the Pacific.

King Kamehameha Day

In honor of Hawai'i's first Mō 'I, King Kamehameha I, people across the islands celebrate the holiday through a variety of ceremonies and parades. The most prominent of these celebrations are the dual Draping ceremonies of the Kamehameha Statue, and the Floral Parade which runs from 'Iolani Palace in downtown Honolulu to Kapi'olani Park

Prince Lot Hula Festival

The largest non-competitive hula event in Hawaii, traditionally held in the Moanalua Gardens of Honolulu, is named in honor of Prince Lot Kapuaiwa who helped preserve the tradition of hula. Festivities include picnics, music, food, cultural demonstrations, and the selling of souvenir buttons and t-shirts.

Ukulele Festival

Having recently celebrated 50 years, the Annual Ukulele Festival brings thousands to the Kapi'olani Park Bandstand to hear the music of local 'ukulele masters, guests artists, ensembles, and the 800-strong 'ukulele orchestra. The event is often accompanied by food vendors, entertainment displays, demonstrations, lessons, and souvenirs.

Aloha Festivals

The beloved annual event is a week-long celebration of Hawaiian music and culture held in Honolulu. Festivities include Ho'olaule'a, the Aloha Festivals Floral Parade, the Royal Court stage pageant and parade, music, dance, cuisine, art fairs, and traditional demonstrations.

Vans Triple Crown

First organized in 1983, the Vans Triple Crown is hosted off of Oahu's North Shore, and is regarded to be the most celebrated surfing series. Considered to be the ultimate test of a surfer's ability, the competition consists of three separate championships, the Hawaiian Pro, Vans World Cup of Surfing, and Billabong Pipe Masters. In addition to event champions, an overall champion is crowned each year.

Pearl Harbor Remembrance

In commemoration of the bombing of Pearl Harbor, the community gathers to remember the tragic losses suffered and to observe the progress we've made since. Attendees park at the Aloha Stadium before boarding shuttles to the Ceremonial Lawn of the Pearl Harbor Visitor Center. A moment of silence is observed at 7:55 a.m., at the exact moment the attack commenced, followed by pass-in-review honors, USS Arizona Memorial programming and a missing man flyover ceremony. Survivors, veterans, family members, and local dignitaries are often in attendance.

Swap Meet

The Aloha Stadium Swap Meet & Marketplace has been a staple of the community of Oahu since 1979. Every Wednesday, Saturday, and Sunday hundreds of vendors and visitors engage in local commerce featuring products such as clothing, accessories, Hawaiian souvenirs, pre-packaged ethnic foods, fine jewelry and vintage antiques. The Swap meet is a multi-generational event encompassing the true Aloha spirit, and the success of the future NASED development will benefit from the continuation and growth of the Marketplace.

2.3

SUSTAINABILITY AND RESILIENCE

Sustainable Site Planning

Development within the Project should seek to provide a sustainable approach to the way the district is designed and managed in terms of energy, water and waste. This should harness natural energy sources such as wind, rain, and sun, reduce the heat island effect, minimize use of fresh water, reuse gray water, plant appropriately, and maintain or re-purpose existing trees if possible. The Project should incorporate sustainable site planning, landscape and building design that aims to maximize resource efficiency, promoting economic vitality, and increasing the quality of life for the project's visitors and occupants. It must create exterior "open space" that encourages passive recreation, social interaction, and physical activities and create "gathering spaces" that serves the local community during stadium events and non-game days.

Among the more visible sustainable design measures should be the project's transit and pedestrian-oriented site layout; green building practices such as natural ventilation, shading and daylighting; and eco-sensitive landscapes that should stress the use of endemic and indigenous species long present and compatible with native plants, shrubs and trees. The Project should allow for flexibility to accommodate future needs.

Establishing a Green Circulation Network

The New Aloha Stadium and Entertainment District should include urban planning principles that cater to Transit Oriented Development. It must provide a network of passive and active open spaces connected to each neighborhood by a multi-modal circulation system that includes green ways, trails and tree lined streets as well as develop hike and bike trails along nearby streams and enhance the existing Pearl Harbor Historic Trail.

Transportation accounts for nearly half of Hawaii's energy consumption (48%). Development within the Project must recognize that due to current demand, the future of transportation suggests an increase in electric autonomous vehicles. Therefore, the Project should aim to reduce greenhouse gas emissions and reliance on fossil fuels by encouraging the use of both hybrid and electric vehicles. The transportation systems should aim to reduce traffic congestion by providing access to the adjacent public transportation network.

Water Efficiency and Management

The landscaping design should carefully consider the environmental conditions of the site. To achieve a comprehensive water efficient landscape, the Project should include native and successful introduced noninvasive plant material that have low water demands. The use of Sod or turf grass shall be limited. Although turf grass lawns make excellent ground covers, tolerate heavy foot traffic, stabilize slopes, prevent soil erosion, and reduce dust and chemical air pollution, due to their lower height and higher transpiration they require more water. As an alternative, hydroseeding should be considered. Efficient irrigation systems such as drip irrigation systems and recycled water that utilize rain sensors should be considered.

Optimize Performance by Utilizing Renewable Energy

Buildings account for nearly 40 percent of global energy use. Stadiums inherently provide large areas of roofing that could include solar collection via an array of collectors or photovoltaics. PV panels can also be implemented into the rooftops of shade structures and other design elements throughout the Project. These arrays could offset utility usage and provide long-term paybacks.

Waste Management

Due their sheer size, Stadiums generate an enormous amount of waste. The project should implement waste management principles that firstly reduce waste generated from operations at the site and secondly divert waste through recycling and composting (if operationally feasible). Visible waste and recycling receptacles should be located along pedestrian paths throughout the site.

Waste Water Management

Through discussions with ENV, it is documented throughout the EIS that the total future buildout of the entirety of the mixed-use program of NASED may exceed the current available wastewater capacity for the site. The potential issue of requiring additional wastewater capacity is a topic that does not need to be addressed as a short-term issue, but may need to be addressed in the future once a critical amount of mixed-use development is set to come online. Due to the presence of the 50,000 seat existing Aloha Stadium, it is known that replacing the existing facility with a smaller stadium (in the 27,500-35,000 seat range) will easily fall within the current wastewater capacity of the site. However, future demand for additional wastewater capacity could become a barrier to future development opportunities if left unaddressed. As part of the research efforts of the NASED team, onsite water treatment options are being evaluated as one potential solution to alleviate future demand. The accompanying District Recycled Water System narrative describes one such solution. The ability to have an on-site water treatment and reuse system would serve to promote strong sustainability goals while providing the necessary additional wastewater capacity to unlock the full potential of the NASED mixed-use development.

DISTRICT RECYCLED WATER SYSTEM

COLLECTION SYSTEM

Wastewater generated from the NASED development will be collected via an underground sewer line system constructed as part of the proposed development and would be conveyed to the onsite wastewater treatment facility. The proposed facility would be located near the new stadium and constructed during Phase 1A so that it will be operating before flows from Phase 1B exceed the municipal sewer capacity.

TREATMENT PLANT

The wastewater generated on the NASED site would be treated at a membrane bioreactor (MBR) plant. The MBR constitutes a complete plant for the treatment of municipal wastewater in compliance with Hawaii Administrative Rules (HAR) Title 11 Chapter 62 Wastewater Systems.

The treatment plant would consist of the following components:

- Headworks – where incoming wastewater would be received and where inorganic solids would be separated from the wastewater using screens.
- Primary Tank – an equalization tank where freshly screened wastewater would be held prior to introduction in the MBR process
- MBR – comprises an anoxic tank, pre-aeration tank, and membrane tanks. The anoxic tank is a bioreactor in which aerobic bacteria digest organic material in the presence of dissolved oxygen. The membrane tanks contain a series of membrane cartridges. As effluent permeates through the membrane cartridges, suspended organic matter and bacteria are separated from the water.
- Disinfection Systems – where effluent from the MBR would be treated to eliminated bacteria and provide clear non-potable water.
- Clean Water Holding Tank – where treated effluent would be held prior to distribution.
- Solids Dewatering – where liquid is removed from biosolids and waste activated sludge to reduce the volume of sludge and provide more effective disposal.
- Odor Control – where odors from the headworks, primary tank, and MBR would be conveyed under negative pressure through an activated carbon system to scrub the air of odors and compounds such as hydrogen sulfide. Exhaust from the odor control system would be located away from sensitive locations such as occupied buildings and outdoor gathering spaces.

The treatment plant would also include an office for the operators, a lab, bathroom, and a shower.

An MBR is capable of removing suspended solids and BOD to levels below 5 ppm and producing effluent with less than 0.2 NTU turbidity. Along with low total coliform and disinfection requirements, the MBR plant will meet all Chapter 62 requirements for class R-1 recycled water.

Chemicals used in treating wastewater at the MBR plant would include sodium hypochlorite (for membrane cleaning); sodium hydroxide for alkalinity; and industrial strength sodium hypochlorite for disinfection and water color. The chemicals would be stored in chemical tanks or in 55-gallon tanks on spill containment pallets.

Screened inorganic solids from the headworks would be deposited in garbage bags. The plant would likely result in several large garbage bags per week to be collected for landfill disposal. Biological solids/sludge produced by the treatment process would be treated by the solids dewatering equipment and periodically pumped out of the plant and transported to an off-site properly regulated disposal site.

DISTRIBUTION SYSTEM

Recycled water (treated effluent) generated by the treatment plant would be classified as R-1 recycled water. The intended uses for the recycled water at the NASED site will primarily be on-site irrigation and toilet flushing, with potentially other uses as allowed by Chapter 62.

The recycled water would be pumped into a recycled water main and distribution system ("purple" pipes) and conveyed throughout the NASED site to provide non-potable water to the buildings and irrigation sites.

DISPOSAL SYSTEM

The treatment plant would provide two separate means for disposal of effluent. The primary disposal of unused high-quality recycled water would be through a discharge as allowed by NPDES permit. The class R-1 recycled water would have additional treatment as necessary to meet the Water Quality Standards from HAR Title 11 Chapter 54. Possible discharge methods include injection into underground drywells, discharge to a stream or other water body, or discharge into a mixing zone as part of the stormwater system. The project will work with the Department of Health as part of the issuance of the NPDES permit to determine the best solution.

As required by Chapter 62, the plant must have a back-up disposal component. This plant will have a back-up connection to the municipal sewer system. The project will work with the Department of Environmental Services (ENV) to make sure that the existing municipal sewer can serve as the back-up discharge. If projected flow from the NASED site exceed the municipal sewer capacity, then accommodations can be made to the onsite system to be in compliance with back-up requirements. These solutions could include oversized primary tanks to store wastewater for an extended period of time, additional surge tanks to store recycled water, and/or scheduled discharges to the municipal system at off-peak hours.

CONNECTION TO AN EVOLVING HONOLULU

Connecting NASED to Greater Oahu

The District will support the establishment of external connectivity from the larger O'ahu urban area through the construction of the Hālawa Rail Station and new Honolulu Rail Transit Project. Additionally, the City and State have various off-site circulation improvements planned for the TOD. These include The Bus, which shall serve as a bus feeder service, and the use of the Complete Streets concept in the design of the streets within the District and outside the District which will support multi-modal movement of residents and visitors alike.

Gateways will serve as a key design element, as entrance into the Hālawa TOD and NASED will be made through a series of carefully designed gateways. These gateways can be expressed through a combination of signage, art, landscaping, lighting treatment, structures, or the orientation and massing of buildings. The main project gateway, "the front door", shall be located at the Hālawa Rail Station, emphasizing the connections between the station, the Aloha Stadium (Phase 1a), and destinations near or surrounding Pearl Harbor.

Public Transit

In strengthening the external connectivity of the NASED, a sustainable option for multi-modal transportation is presented which improves circulation both on-site and off. Public transit plays a critical role in achieving this goal, with connections between the site and the Greater Oahu Area being facilitated by a combination of the HRS, vehicular corridors, external bus and shuttle service, and pedestrian pathways. Augmented bus and rail transit serve the practical purpose of providing an accessible vehicle for travel to and from the site, while also supporting the integration of the site contextually within the area. This will inevitably enhance the identity of the NASED development. The presence of accessible multi-modal transit could also enhance economic stimulation for the city at large, encouraging visitors to travel to the site from more heavily trafficked tourist areas along the rail as well as promoting local residents of the site to travel more freely to retail and/or entertainment areas they would generally not frequent due to heavy traffic congestion.

HART

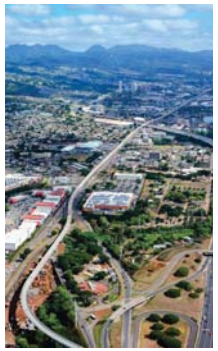
In conjunction, the NASED development and accompanying HART site will naturally become an entryway into the overall development. In considering this, it becomes vitally important that the Aloha Stadium maintain a clear pedestrian connection to the HART station, supported by restructuring the bus-routes and roadways to direct traffic onto the HART site. This presents a key opportunity to turn the proverbial 'front door' into a centralized hub for retail, dining, and visitor amenities; capitalizing on the convenience provided by the existing infrastructure.

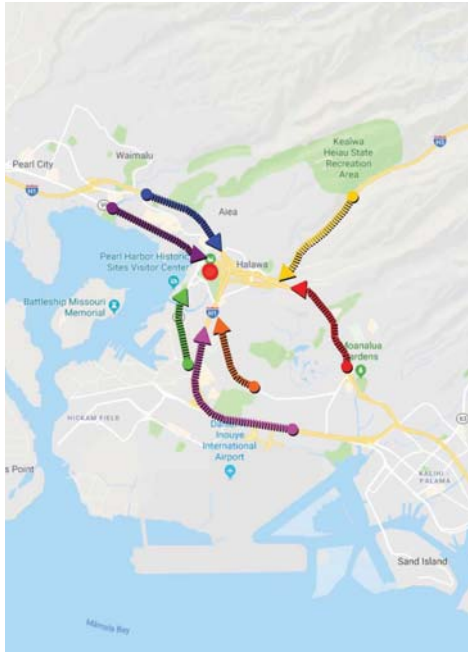
Enhanced Road Networks

On the opposite side of the site, Kahuapaani St. acts as the other major 'gateway' into the site development, serving as the entrance for all vehicular traffic coming from H1, H201, and H3. In order to sustain usage of the commercial development and stadium, it is critical that the road networks connecting the highways to NASED support the function and capacity this development may require.

Strategic advancement of this connectivity would also improve the circulation of the site at large, creating a balanced transportation network. Examples of how to achieve this include, but are not limited to, the following methods:

- Street Grid: Create an internal grid street network within the stadium site and the other development sites to improve connectivity. The grid network could also create development parcels for TOD.
- Ring Road: Provide a perimeter road to provide access to the office, retail back of house, and residential parking garages to allow easy access for residents, employees, maintenance, and deliveries daily as well as during event days when traffic is high.
- Existing/New Intersections: Provide intersection spacing that achieves signal coordination and minimizes circuitous pedestrian travel.
- Intersection Reconfiguration: Reconfigure intersections to accommodate modified traffic flows and be made safer for pedestrians.
- Realign the existing one-way section of Salt Lake Boulevard to intersect Kamehameha Highway across from the Ford Island Bridge.
- Convert all sections of Salt Lake Boulevard to two-way travel to maximize connectivity and access to all uses in the area (including Aloha Stadium Station).
- Include new access points on both sections of Salt Lake Boulevard providing access to local streets within the stadium and Puʻuwai Momi sites.
- Include construction of an off-ramp from the H-1/H-201 interchange allowing direct access to the stadium site.
- Maintain a portion of the existing radial circulation pattern within the stadium site.





2.5

ACCESSIBILITY AND SAFETY

Increasing Accessibility to the Site

This PMP develops concepts for improving the connectivity and mobility in the Hālawa / Salt Lake area as envisioned in the TOD Plan (Section 3.3). The NASED team mindfully set forth means of improving and accommodating all forms of transportation within the District, while focusing on improving safely through the creation of numerous pedestrian overpasses and paths that allow for safe walkability throughout the area.

By creating extensive walking paths, bike paths, in addition to developing safer routes for mass transit and ride sharing options, the Plan creates multi-modal streets and paths that enhance the sense of place and encourage recreation and activity throughout the entire District.

Project roadways, pathways, and trails build visual and physical linkages from the District to the larger TOD and surrounding community.

Multimodal Connectivity

Through improving multimodal accessibility to and within the District, an accessible network is created in support of the Hālawa Rail Station, Aloha Stadium, NASED, surrounding community, businesses, and attractions. The success of this relies heavily on these services being both available and comfortable to use. In creating pedestrian friendly, accommodating connection solutions a model is presented which improves overall safety and compatibility within the larger community.

Site Access Points

The NASED development is surrounded by critical infrastructure which serves greater Oahu. Site access for NASED will need to be considered both during construction and during full operation. The manipulation streets owned by either HDOT or CCH will require careful coordination and group planning. As an example, adjusting on-ramps for H1 or H3 may take an act of US congress since the highways are federal infrastructure.

EQUITY AND INCLUSION

Encouraging a Variety of Lifestyles

The community and stakeholders have expressed a clear desire for NASED to encourage a balance of housing types. To preserve the socioeconomic diversity of the Halawa Area, and avoid economic-driven displacement, a development plan needs to provide a variety of housing types and sizes. This focuses on housing that appeals to a diversity of lifestyles, which could include transit-oriented young families, empty nesters, and singles. A mix of for-sale and rental housing should incorporate design features that promote community and harmonize with the surrounding neighborhoods. Special attention should be given to promoting live work areas on site as well as ease of travel on and off the site for residents who work elsewhere on the island.

It is vital to encourage the intermingling of lifestyles by providing a mix of housing types throughout the site and interspersing a variety of amenities evenly across the development. No one area of the site should be overburdened with the majority of the community amenities.

The urban design within NASED should emphasize the livable community-based aspects of new development. A sense of placemaking, with the intent of achieving an iconic appeal through design excellence, is necessary to make the area a great place to visit, live, work and connect. Collectively, these elements should organize the project to create a strong visual image, focusing activity on the stadium, the mixed-use core, and opening up to the surrounding neighborhoods.

Residential and Housing Diversity

Offering several options for housing is integral to establishing a vibrant community for business, entertainment, and livelihood that this plan seeks to create. To account for this, the site plan is intended to accommodate a balanced mixture of multi-family housing options, including lease-lended apartments, conventional condominiums, and premium condominiums. High density residential developments, such as the aforementioned units, will help the overall project achieve financial feasibility. Lower density housing should be used in areas that require lower building heights or lower floor to area ratios. These areas should provide the same level of nearby community amenities as the higher density areas.

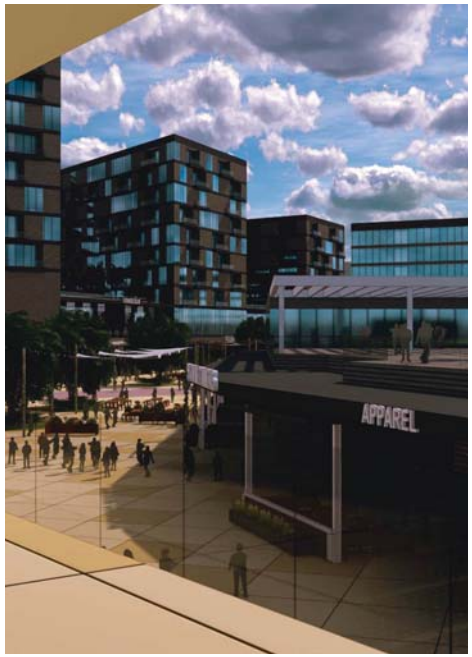
In order to maximize potential value, site and building design should take advantage of quality of life amenities often provided by residential spaces, such as mountain and coastal views and prevailing breezes, courtyards, and rooftop accessible outdoor spaces. Special attention should be given to crafting views based on the types of housing and the location on site. A unit for a small family may prefer a location with some distance from the stadium and a mountain view so as to have a quieter space with less light pollution at night. A single person or young couple who prefer a thriving nightlife may prefer a unit with a view of the stadium and easy access to the bars and restaurants adjacent to the stadium.

Accommodations for Visitors

The development of dedicated space for visitor amenities, such as hotels, restaurants and travel-oriented coworking offices, establishes the revenue stream needed to offset initial costs as it allows the mixed-use district to bring outsourced revenue to Hawaii without competing with local residents and businesses. Office, residential, retail, restaurant, and entertainment uses will activate the area with "round the clock" activity, generating a greater level of stability for the area. This constant activity will promote a diversity of retail and restaurant options. Quick lunch spots for people who work on site as well as tourists visiting nearby attractions or retail spots will be able to stand next to large scale restaurants and bars which see most of their clientele in the evenings surrounding sporting events or other entertainment options provided on site.

Transportation options and amenities will play an important role in supporting these uses. The rail station will play a vital role in bringing visitors on and off site. Attention must also be given to vehicular transportation. In every way possible, visitors should be encouraged to use alternate forms of transportation: from the rail to biking to walking. This will require a well designed pedestrian circulation system that keeps pedestrians separate and safe from the vehicular circulation on site while also providing easy access to shops, restaurants, entertainment, and site amenities. Where vehicles are present, congestion should be reduced as much as possible and adequate parking provided. The opportunity for shared parking between daytime and nighttime uses should be explored. It is imperative to move vehicles on and off site as quickly and smoothly as possible.

To serve the convenience needs of new residential units and for the surrounding neighborhoods, this mixed-use district would offer an eclectic mix and variety of stores and shopping opportunities, creating a unique street-level engagement opportunity and appeal. This appeal can be bolstered by the establishment of new cultural facilities, such as museums, galleries, or attractions, the likes of which would also serve to draw new residents to the district. Special attention should be given to make the development as inviting as possible for both visitors from afar as well as surrounding neighborhoods. Ease of movement on and off the site in several locations can bolster the relationship between the new development and the surrounding established neighborhoods. Visitors from these surrounding neighborhoods should feel just as welcome as the new residents to use the public amenities provided on site.



ECONOMIC VIBRANCY

The New Aloha Stadium

The economic vibrancy of the NASED site will be developed around the ability to draw a multitude of types of people to the site for a wide variety of attractions. This will include, but is not limited to, events at the stadium, retail and entertainment dispersed throughout the site, accommodations for visitors, quality rental and for-sale housing, and office space.

The main anchor for the new development will be the New Aloha Stadium which will be an updated, state of the art facility which will have the ability to better accommodate the multitude of events that have taken place on this site for so many years as well as draw new talent and entertainment events to increase the excitement and vibrancy of the development. Serious thought has also been given to ways to incorporate additional features to the stadium that will allow for additional events that are not able to take place at the current facility. These include, but are not limited to, meeting rooms and lounges with non-event day rental potential, retail and restaurant areas that are open to the public when the rest of the stadium is closed, and an amphitheater, which would share back of house facilities for added efficiency, that can provide a space for smaller scale events or overflow seating for particularly large events held within the stadium.

The Surrounding District

While the stadium is currently the only draw to this site, in the future it will be supported with an array of retail, restaurants, and bars to provide a venue for stadium visitors to come early and stay late for stadium events. This creates the entertainment district that provides an added layer of economic vitality to the district as a whole by providing a venue that is not only visited for a singular event, but provides entertainment and excitement for the entire day surrounding the event.

The goal for the makeup of the entertainment district is to provide a wide array of types of entertainment. Food and beverage should be available in small lunch spots for quick meals, to large sit-down restaurants for upscale dinner options. Family friendly restaurants should be available for visitors of all ages and bars and upscale spots should be available for tailgating and evening events. Likewise, the retail experience on the site should have a wide range of options from small boutiques, to large scale retailers but there should also be an opportunity for pop-up retail experiences such as the Swap Meet, farmers markets, or art/crafts fairs.

Beyond the entertainment aspect of the site, there will be office space, housing, and cultural activities that will keep the site moving on a daily basis. Even on the rare occasion when there is no entertainment event happening on site, people will still be coming and going for work, school trips or other educational activities, meetings, or simply coming home.

Transit Oriented Development

The TOD nature of this site provides a unique opportunity for this site to be the premier entertainment venue in the State. By having the anchor of the Stadium as a major draw to the development with the added benefit of having the HART line able to bring such large amounts of people to and from the site, NASED will have the economic advantage of being a one-of-a-kind entertainment district unlike anything else on Oahu.

While traffic and congestion issues have plagued the current stadium, the implementation of TOD strategies for the new development can provide benefits for visitors as well as locals in the surrounding neighborhoods. A main goal for this development is to reduce congestion issues as much as possible. This can include well designed pedestrian pathways to and from all major aspects on the site. These should link entrances to the site such as the HART station, the Bus station, major parking structures, and rideshare drop off and pick up zones to all the major site amenities while keeping pedestrian traffic and vehicular traffic separate.

Ease of movement to and from the site as well as movement within the site will be integral to keeping people entertained

by allowing them to experience as many areas of the site as possible, as well encouraging visitors to return for both large scale events or simply for a quick lunch.

Economic Diversification and Sustainability

NASED will be a more sustainable development due to its economic diversity which will allow it to weather downturns by continuing certain functions when others are diminished. Special attention should be given to ensuring a diversity of amenities to make the site a destination for people from every walk of life: singles, couples, families, a wide range of ages, interests, and socioeconomic statuses.

The era of Covid-19 has created new challenges for Hawai'i. Tourism, a cornerstone of the economy, has nearly entirely diminished due to travel restrictions. It is assumed that it may take many years for the economy of Hawai'i to rebound to pre-pandemic levels. These economic conditions are being factored into the NASED development, and due to times like these the economic diversity of the development has become more critical than ever. Reducing the reliance of mainland or international travelers by crafting a locally-focused micro-economy within NASED will only bring positive benefits in the future. It is the responsibility of urban planners to respond to events such as the Covid-19 pandemic and use the opportunity to provide healthier, more economically diverse, and responsible design solutions to the people impacted by NASED.

Guidelines

3.1

OVERALL MASTER PLAN AND CONCEPT

Hawaiian Names for Hawaiian Places

To normalize the usage of Hawaiian words throughout the District and embrace the community's recommendation to foster a Hawaiian sense of place throughout the development process, Hawaiian names were selected for different areas throughout the District. The names were selected to encourage usage and connection to the history of the site.

Hālawa Makai or Hālawa Kai

To support the connectivity to the Hālawa Rail Station, the suggested name for the portion of the parcel nearest to the ocean shares the name of the rail station (Hālawa) and utilizes a widely known Hawaiian directional term – makai – meaning towards the ocean. It also utilizes the terms mauka and makai to maintain continuity with the stadium, in which the directional terms "mauka" and "makai" are used.

Hālawa Mauka or Hālawa Uka

The parcel mountainward of Hālawa Makai is suggested to be called Hālawa Mauka, utilizing the commonly known directional term – mauka – meaning towards the mountains. These can be modified as needed to accommodate wayfinding utilized for the new stadium.

Āliapa'akai

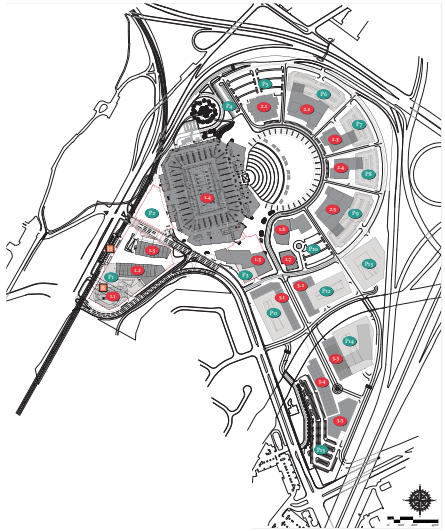
Āliapa'akai is the traditional name for "Salt Lake." It references a traditional mo'olelo (story) of Pele and Hi'iakaikapoliopele. This name was suggested for the southern portion of the District based on input from the Salt Lake - 'Āliamanu neighborhood board, which has jurisdiction over this area.

Place-Based Inspiration

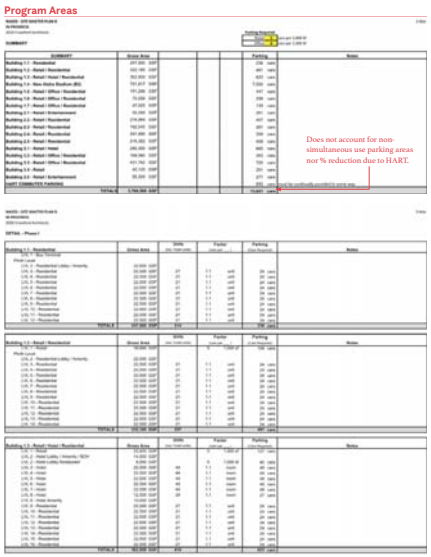
Āliapa'akai is the traditional name for "Salt Lake." It references a traditional mo'olelo (story) of Pele and Hi'iakaikapoliopele.

Overall Masterplan

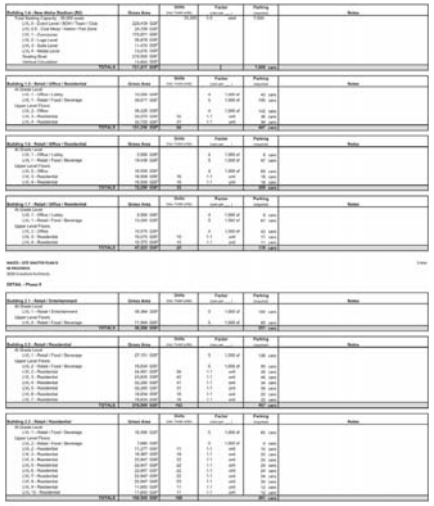
This full-build master plan as shown serves to provide an indicative example of what one master planning solution could be. The timeline of the full-build scenario is expected to take many years, and the ultimate size and timing of the development will be dictated by what the market allows.

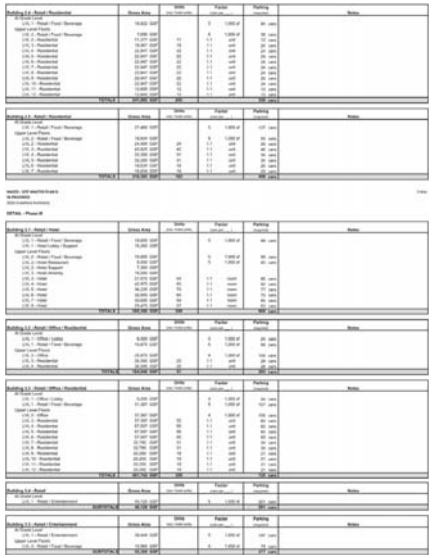


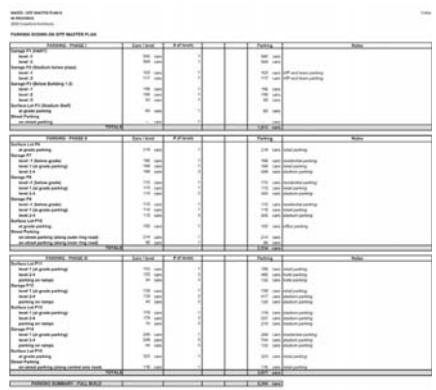
Program Areas



Does not account for non-simultaneous use parking areas nor % reduction due to HART.







- Phase 1A refers to the New Aloha Stadium and the demolition of the existing Aloha Stadium
- Phase 1B refers to the initial tranche of Mixed-Use Development
- Phase 2 refers to the secondary tranche of Mixed-Use Development
- Phase 3 refers to the final tranche of Mixed-Use Development

3.2

PEDESTRIAN STUDY

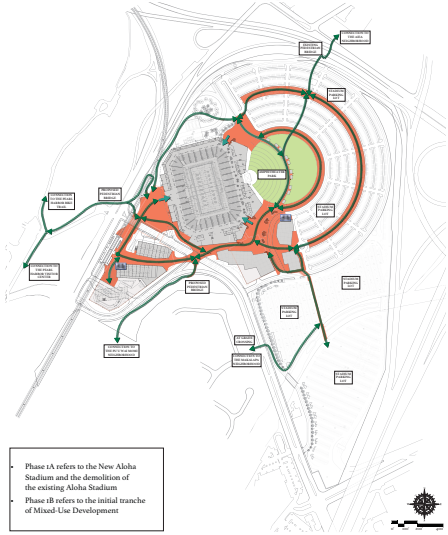
Public Gathering Areas

The depression left by the removal of the existing stadium can be filled by the soil removed for the placement of the New Stadium. This fill is sculpted in such a way as to create a circular park and multi-use green-space for the development as well as an amphitheater that slopes down towards the New Stadium. Because the main stage of the new stadium is at the 50-yard line, this aligns with the stage created for the new amphitheater. Both venues can be served equally by back-of-house, show power and green room areas. The two-side scoreboard above faces into the stadium and out to the amphitheater; this creates an opportunity for live overflow viewing of large events or potentially live streaming remote events, such as off-island UH sporting events on the amphitheater lawn. The amphitheater can comfortably seat around 10,000 people. The club and roof-top venues have the ability to look down on either venue, the stadium or the amphitheater. The upper park of the amphitheater is ringed by an overhead circular shelter providing areas for vendors, picnics and other events like farmer's markets, food festivals or art fairs.

Surrounding the amphitheater park, the existing parking lot will be improved and expanded to be able to replace some of the lost parking from the construction of the New Stadium. It will also have comfort stations for fans and be able to host the reconfigured Swap Meet. The 50th State Fair will be unmoved and remain on the South Hālawa Lot.

Phase 1A and 1B Pedestrian Traffic Study

The pedestrian traffic flows depicted in this diagram highlight key considerations of this document. Most importantly, the NASED development must tie directly into the adjacent residential areas. The NASED development is intended to serve the adjacent residential areas in addition to the residents who will live within the district, and the key to the future economic success of the district will be in allowing as many pedestrians from the community to take advantage of the amenities as possible.



➔ STADIUM ENTRY GATES
↔ MAJOR PEDESTRIAN PATHWAYS
▦ BICYCLE RENTAL
🟧 PEDESTRIAN ONLY PLAZAS & PROMENADES

- Phase 1A refers to the New Aloha Stadium and the demolition of the existing Aloha Stadium
- Phase 1B refers to the initial tranche of Mixed-Use Development

3.3

STADIUM DESIGN

The Stadium in the PMP is a design that is and should be unique to this location and to Hawai'i in general. The use of the stadium is not only for sporting events, but for concerts and numerous other activities. It needs to be flexible and adaptable to all events, creating the best viewing opportunities for each event, compromising on none.

The Stadium is designed as a C-shape, with the open side facing the mountains. The field elevation of the New Stadium corresponds with the field elevation of the Existing Aloha Stadium. The Service Yard on the north side of the stadium is sunken down into the site and thusly protected and not visible from the surrounding highways. The stadium staff has a dedicated parking lot and stadium entry to separate them from fans on event days. The stadium has three (3) main gates. The Makai Gate is centered on the western side of the stadium will receive the majority of visitors coming from the HART station. The North Mauka Gate is on the northeast corner of the stadium and will serve the visitors coming from the circle parking lot. The South Mauka gate is located on the southeast side of the stadium and will receive visitors coming from the north and south Hālawa Parking lots.

The Stadium bowl is C-Shaped bowl for a number of reasons. The lower bowl is a full ring of seating, putting the fans as close to the action as possible. The upper bowl is the C-Shape, putting the majority of the fans on the home team side of the stadium. This side of the stadium is also the shaded side, and in late afternoon and evening games, it is facing away from the sun. Putting the main stage at the 50-yard line, rather than in the endzone puts the stage closer to a larger number of fans, minimizes the number of seat kills and doesn't eliminate any of the premium seating (suites, loge, club, etc.) so the value of these seats is maintained for sports or concerts. The eastern side of

the stadium is left open for expansion, either permanent future expansion or temporary bleachers being brought in and placed on the concourse and the roof top club areas. Given that the media tower and premium seats are primarily on the western side of the stadium, the side furthest away from the existing stadium, it can be built moving from west to east and allowing for easier access to the existing stadium during construction.

The PMP creates a stadium that is unique to Hawaii. The design of the stadium from side to side is based on the Makai (Ocean) Side and Mauka (Mountain) side aesthetics. The view from the stadium bowl is to the lush mountains to the east. The views from the premium areas, loges and clubs are toward Pearl Harbor and Aiea Bay. The stadium is very open to allow for the breezes to blow through and take advantage of natural ventilation. Even the suites can be opened front and back to allow for air to flow through. The 360-degree concourse is open to the field so one is never far from the action. The roof structure provides protection from sun and rain. Multiple loges and clubs also provide unique, relaxed opportunities to view a game. The roof-top clubs on the Mauka side of the stadium provide a family-friendly atmosphere for watching events while swimming, playing yard games or relaxing in a cabana.

Rather than being a giant venue sitting in a sea of parking, the new stadium will blend into the full development. The southern side of the stadium will form one half of a pedestrian mall leading from the HART Station to the rest of the site. Stadium functions in this area will consist

of program that can be outward facing on non-game days and inward facing when there is an event. The Hall of Fame, the Team Store and the Ticket Offices are accessible to pedestrians 7-days a week. The main element on the south side of the stadium will be a multi-level Food Hall. Flexible food stalls for up to 10 local vendors along with two bars and a roof terrace can serve visitors throughout the week and serve as part of the stadium concessions during events. Stadium expansion to the east side can provide additional multi-use type spaces in the form of the Mauka Club which can be a restaurant, host events and has a roof terrace with pool and the eSports Club which can be a game-day club or and eSport café, with streaming rooms, gaming areas, food and the ability to host formal eSports events for several hundred people.

Upon completion of the Stadium, the existing Aloha Stadium must be removed, the resulting hole needs to be filled and the existing parking lots need to be repaired,

improved and expanded. The PMP design prepares for full access of stadium staff and fans to the New Stadium while this next step is under way. The existing Aloha Stadium will be removed as sustainably as possible. Amenities and memorabilia can be salvaged and re-used or sold. The steel structure will be taken down and recycled. The concrete decks, structure, footings and foundations will be ground up on site into gravel and used as road beds and structural sub-base. The goal of the PMP is for a very minimal amount of the existing stadium will find its way into a landfill.

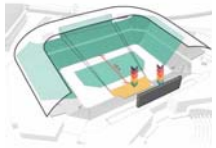
INNOVATIONS IN DESIGN

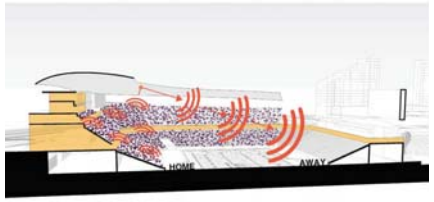
Creating A Unique Look

- Iconic Hawaiian Centric – Framing the View - Picturesque Views of Mountains, Laid-back Hawaiian Feel (Loge 'Cabana' Decks, Open Air Club Lounges)
- Openness of Building (Open-air Suites, Clubs, and Concourses)
- 360 Concourse-Event Connection
- Connection to Nature
- Roof Design – more than a mere formal element. Should consider light transmission and diffusion performance; balance of natural light and best comfort conditions. Should consider performance related to stadium acoustics; sectional geometry effect on sound created by spectators. Should consider sun and rain protection – allow for vertical shelter of spectator stadia.

C-Shaped Bowl

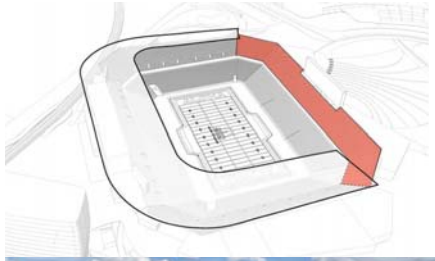
- Visual Acuity – proximity of fans to event
- Majority of Fans on Home Team (Shaded) Sideline
- 50-Yard Line Main Stage – Bringing the Event closer to the Majority of Seating Bowl – Minimize Kill Seats – Greater number of seats with better value related to focal point of event
- Capacity for Expansion – Provide easy and natural expansion in the future without compromising spectator experience, life safety, and intended aesthetic
- Temporary (addition of bleachers on East Concourse)
- Permanent (Extension of Upper Bowl above East Concourse)
- Value of expansion is a better price point; ticket added is a better seat; not adding the worst seat(s) in the house for a more expensive construction cost
- Receives natural breezes from NE and SE
- Stadium forms to site and context; not merely an oval plopped down into the parking lot.
- Cognizant of keeping existing stadium open during construction of the New Aloha Stadium

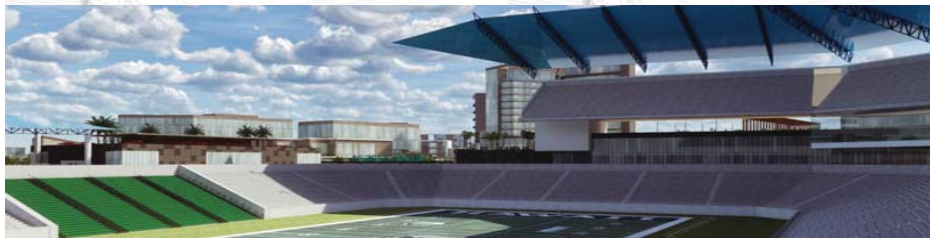




Expansion Opportunities

While the final sizing of the stadium is being determined (27,500-35,000), the expectation is that the new facility will need to have the ability to provide expanded seating opportunities. Larger events may require additional seating, or the future may demand consistently higher attendance capabilities. Either way, the new stadium facility should provide accommodations for temporary additional seating.





Extending Event 365-Days Per Year

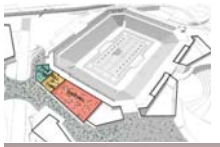
- Access to Stadium Spectator Amenities for Adjacent Site Functions – Restrooms | Concessions | Guest Services & First Aid (Swap Meet, Amphitheater, State Fair)
- Access to Stadium Program Areas on Non-Game Day (i.e. Food Hall, Hall of Fame, Team Store). Arranged to allow Stadium-side/Game-Day access as well as Non-Game-Day access from adjacent Development.
- Club and Premium areas arranged to allow Non-Game Day Access | Use, Secured from remainder of Stadium areas (Banquet Functions, Corporate Events)

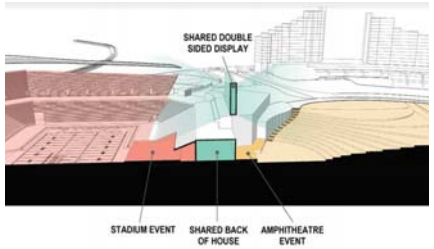
Multipurpose Event Center

- Multi-purpose Event Centric Facility which happens to also accommodate Athletic Event Viewership
- Ability to close off sections of stadium for smaller events without hurting overall stadium operations
- Operationally quick change over from one event to another event

Amphitheater

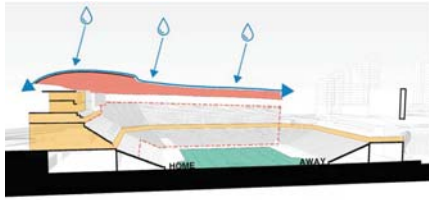
- Utilize Site Grading Potential – Demolition of Existing Stadium – Placement of Stadium Event Field and Amphitheater Stage at same elevations
- Maximizes dual use of mixed-use program spaces; Amphitheater and Stadium have ability to share back of house | backstage Program (Green Room, Storage, MEP Systems)
- 50-Yard Line Scoreboard – Double Sided
- Pre-Game Fanfare
- Away Game Spectator Viewership Opportunities – Isolation from Mainland
- Stadium Event Overflow Capacities

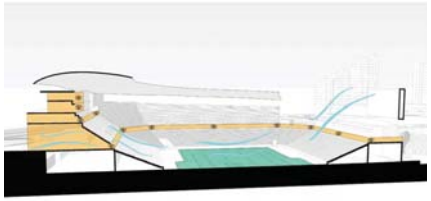




Environmental Considerations

The visitor experience at Aloha Stadium needs to consider environmental conditions people will experience. The environment on Oahu is warm with occasional rain, so a roof system to alleviate direct sunshine and precipitation should be considered when designing the new facility. Football games and many other events last a few hours, and the visitor experience during long games can suffer when fans are subject to the warm sunshine for too many hours. Also, in the current Aloha Stadium, the majority of visitors have no roof coverage from precipitation. The goal of the PMP stadium concept is to provide a roof to shield the majority of visitors from precipitation. The size of a new roof and amount of coverage provided will be determined by what is deemed affordable.





Views

The PMP concept stadium seeks to build upon views created by the regional geography. The existing Aloha Stadium orientation aligns the 50 yard line in the makai/mauka direction, but the existing structure is not readily designed to orient with these views. Previously, when the stadium was capable of transforming between football and baseball configuration, if the stadium was set to a baseball configuration then the open ends of the stadium would frame views makai towards JBPHH and mauka towards Oahu's iconic mountains. However, the existing stadium is locked into its football configuration.

This PMP conceptual stadium design seeks to capture the stunning views by nature of the orientation of the seating bowl and stadium. Fans within the bowl will have picturesque views towards the mountains, and fans along the makai/western concourses will have views towards JBPHH.

Orientation: Sun, Wind, and Shade

The orientation of the stadium features breathtaking views for a world-class fan experience, and the C-shaped roof design creates shade from direct sunlight and precipitation for the majority of fans. The large C-shape has the back of the 'C' facing makai/west. This allows the roof to provide passive shading during the afternoon/evening sun to maximize fan experience. The orientation of the C-shaped roof additionally serves to catch the prevailing winds which move westerly towards the harbor. The passive ventilation combined with the shade keeps visitors cool and comfortable.

3.4

HART / TOD

The most significant amount of mixed-use development in the PMP happens on the HART site. Currently, the HART site contains the recently completed HART station, a bus transfer terminal and parking for 600 cars. Given the location of this property, with the HART station, the intersection of Salt Lake Blvd and Kamehameha Highway and at the entrance to the NASED Site; it is currently being underutilized and not maximizing its potential for development. The PMP calls for new connections to the HART station, an entry plaza, a retail experience, a hotel, a significant amount of parking and 700 residential units.

The HART station is connected directly at the upper level to an elevated retail plinth running parallel to the train track. This retail serves anyone getting directly off of the train. It also contains direct access to parking and lobbies for the residential tower. Exiting the HART station on the ground level brings visitors to the HART Plaza.

Directly south of the HART plaza is the covered bus transfer terminal and parking garage. Directly to the north is an at-grade crossing of Salt Lake Boulevard taking visitors to the Makai Gate and Stadium Entry. In the PMP, Salt Lake Blvd is to be closed temporarily on event days for pedestrian access. Traffic can be routed around to the southern portion of Salt Lake Boulevard with a few minor modifications.

From the HART plaza heading to the east, visitors walk along an outdoor retail promenade with retail, restaurants and entertainment venues on both sides. At grade retail on both side allows for quick and convenient shopping going to or from the HART station. A second level or retail on the south side connects into the parking garage and residential

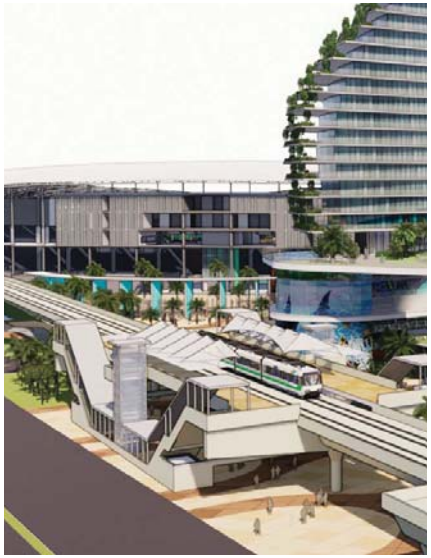
towers and provides opportunity for restaurants and bars to overlook the mall below. A gently sloping land bridge continues the pedestrian experience over Salt Lake Blvd and to the Stadium and the rest of the NASED development.

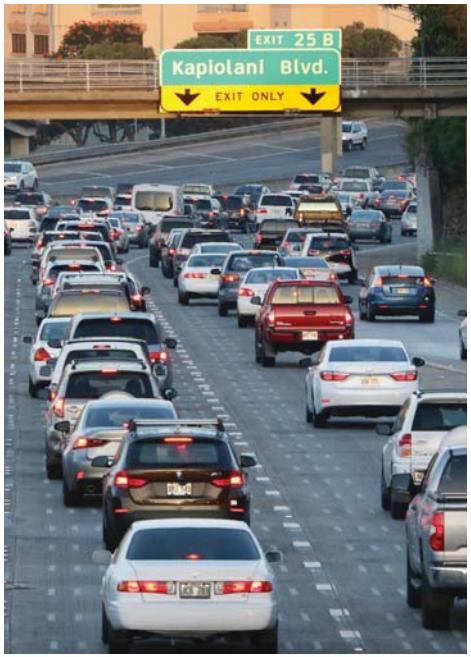
The hotel lobby is accessed from HART on the south side, as part of the pedestrian mall and from Salt Lake Blvd on the north via a porte cochere. Parking for the hotel is up a ramp from the porte cochere and above the lobby and retail. The lobby of the hotel is open through the building and also serves as the lobby for one of the residential towers. Elevators from the lobby take guests and residents up through the garage to the hotel rooms, hotel amenity deck and residential units. Both have views either toward the stadium, Hālawa development and mountains or out towards Pearl Harbor.

The bus transfer terminal is located on the ground level of the parking structure on the south side of the HART site with easy connections to the HART station. It also serves as an area connected to but separate from the site for rideshare drop off and pickup. Above the bus transfer terminal is 5 levels of parking for the residential towers and for HART. This parking is located behind and above the retail shops with convenient access to the elevated plinth level and the HART station. The 600+ parking stalls that were previously located on grade for the HART station are now located in the garage.

Above the highest level of screened parking is a second elevated plinth for the residential towers. This serves as the amenity deck with pools, outdoor lounge areas, cabanas, yard games and lush plantings. It provides a private oasis for residents, separate from the rest of the Hālawa site. It also connects across the retail mall to the hotel tower. Convenient elevator connections bring residents down to any level of the garage or retail areas below.

The elevated plinth level of the HART site is also designed to allow for a bridge connection to the Pu'uwai Momi site to the south, either for an immediate connection to the existing neighborhood or for a connection to a revitalized Pu'uwai Momi in the future. This reinforces the importance of preserving potential connections to all the neighborhoods and districts surrounding the NASED Site.





3.5

TRAFFIC AND CONNECTIVITY

Traffic Revisions

Event-Day Traffic

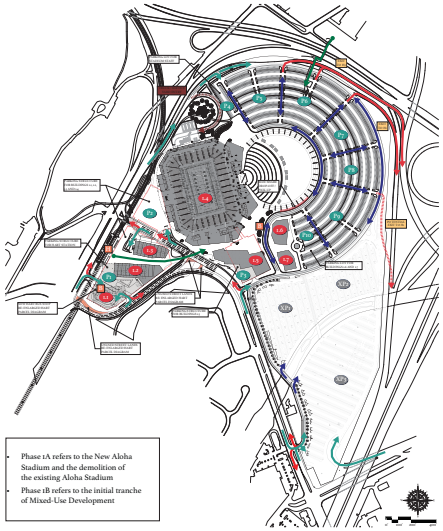
Vehicular traffic for events at the existing Aloha Stadium is an identified issue for the current development. Traffic congestion occurs for hours leading up to major events (such as UH football games), with many tailgaters and visitors congregating throughout the surrounding neighborhoods for the hours leading up to parking gates opening. The existing Aloha Stadium hosts the Swap Meet in the ring-shaped parking lot surrounding the facility every Wednesday, Saturday and Sunday. The traffic mitigation principles of the NASED PMP are based on the foundation of the Hālawa Area TOD Plan.

Mitigation

Traffic mitigation for the NASED development is best managed through multiple simultaneous strategies. Stacking vehicles during large events, strategic locations for future structured parking garages, and a variety of multi-modal transportation options will all serve to alleviate traffic. The foundations of the NASED PMP emulate the traffic mitigation features of the Hālawa Area TOD Plan for the simple reason of the desire of creating a truly 'Transit Oriented Development'.

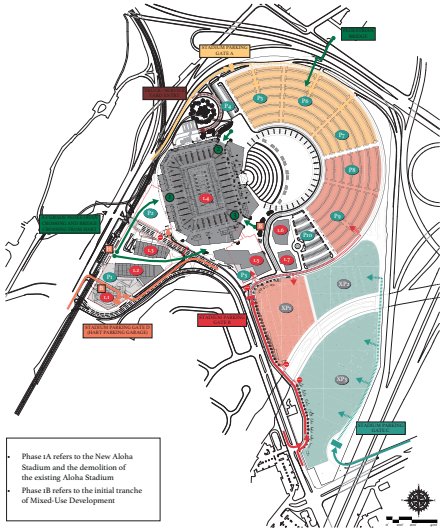
Phase 1A and 1B Typical Day Traffic

In addition to the new Aloha Stadium, the NASED development will bring a diverse set of program and activity to the area. This increase in activity types can bring additional traffic, but mitigating the traffic has always been a high priority of both the Hālawa TOD Plan and the NASED PMP. However, there are key differences between the NASED PMP and the Hālawa TOD Plan. The NASED PMP incorporates market research information which informs the initial quantities and timing of program accompanying the initial construction phases of the project. A key component of the economic viability of the NASED development is the continued operations of the existing Aloha Stadium alongside the construction of the new facility. Large event operation at the existing Aloha Stadium during the construction of the new facility will involve a large need for logistical coordination. The location of the Option B stadium in the NASED PMP allows for the construction of the new facility, the continued operation of the existing facility, and the continued operation of all other current stadium events such as the Swap Meet. Parking capacities must be balanced throughout the construction period of the new stadium in order to maintain adequate capacity and alleviate potential traffic issues due to excessive car queues.



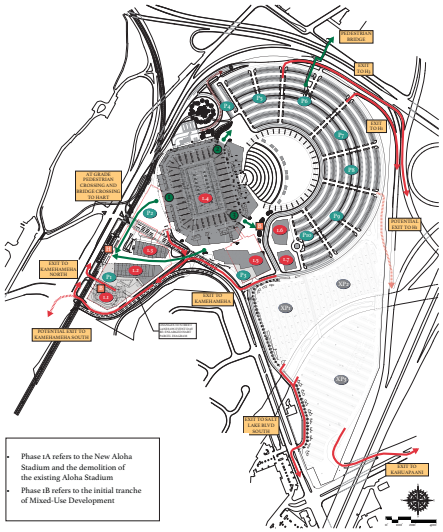
Phase 1A and 1B Event Day Ingress

Site access for the Swap Meet, stadium events, NASED residents, and other site functions will all need to be considered in coordination. Although Phase 1 is set to be divided between the initial Stadium which is followed by the mixed-use Phase 1B development, the various projects must be designed in coordination with the entirety of the NASED master plan in mind.



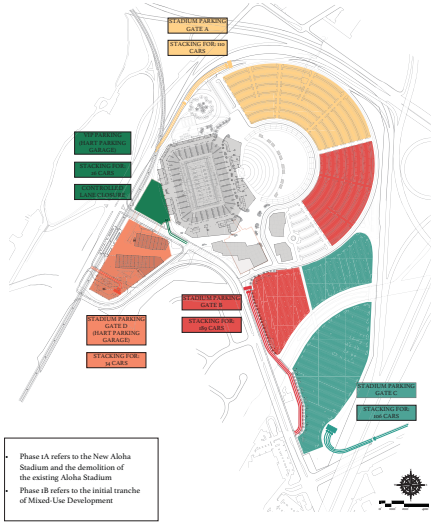
Phase 1A and 1B Event Day Egress

Egress for the Phase 1 projects will be a critical item to mitigate, both on a day to day basis as well as for large events. With increased uses on site there will be an increase in the amount of traffic, so on-site queuing and dynamic lane-changing strategies will need to be employed. A key component of the PMP egress strategy for large events are alterations portions of Salt Lake Boulevard.



Phase 1A & 1B Stacking

A key feature of mitigating traffic for the NASED PMP is the stacking of cars. Stacking vehicles within the boundaries of the entertainment district provide several key benefits. First, to help maintain traffic flow in the streets and roads adjacent to the development there must be as much capacity is reasonable to provide for stacking vehicles combined with a state of the art fast and efficient ticketing system for fast entrance. Over time, additional structured parking will need to be provided to accompany the additional program in future construction phases. The strategic location of parking benefits visitors during events, as well as providing an everyday amenity for the residents, neighbors, employees, transit riders, and tourists.



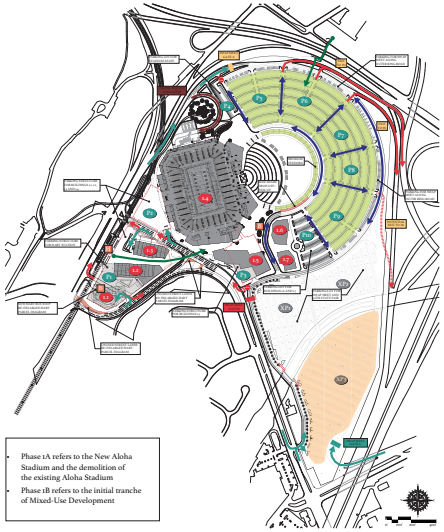
- Phase 1A refers to the New Aloha Stadium and the demolition of the existing Aloha Stadium
- Phase 1B refers to the initial tranche of Mixed-Use Development

PARKING LOT ENTRY GATES
STACKING LANES
PARKING LOTS FOR THE GATES

Phase 1A & 1B Swap Meet & 50th State Fair

As soon as construction for Phase 1A & 1B begin, the Swap Meet will need to be altered into a new configuration. Almost the entire western/makai half of the circle of parking surrounding the existing stadium will be lost to construction site. Fortunately, the Swap Meet can easily fit on the eastern/mauka half of the parking lot surrounding the existing stadium. This will allow the Swap Meet to continue operations while the new facility is built; the old one is demolished, and either an amphitheater or other amenity will be built to fill the leftover depression.

The 50th State Fair, which currently opperates in the Lower Halawa Lot, will continue to be able to do so during this phase of construction. Parking for the fair will be provided in the Upper Halawa Lot as well as the eastern/mauka side of the circle of parking if needed.



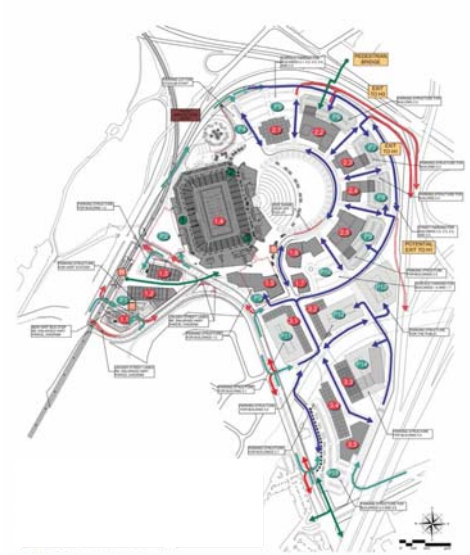
PHASE 1A and 1B

- NEW SITE BUILDINGS
- NEW PARKING (STRUCTURES/LOTS)
- EXISTING PARKING LOTS
- SITE ENTRY POINTS
- SITE EGRESS POINTS
- INTERNAL CIRCULATION
- BUS STOP / HART STATION

- Phase 1A refers to the New Aloha Stadium and the demolition of the existing Aloha Stadium
- Phase 1B refers to the initial tranche of Mixed-Use Development

Full Build Typical Day Traffic

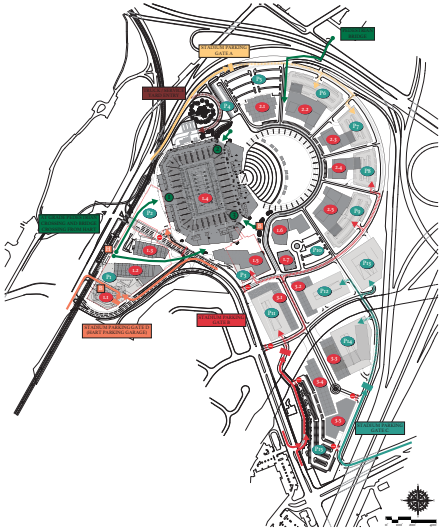
This full-build daily use diagram provides an example of the complexity and cohesiveness expected for the circulation of NASED. Strategically placed on-site parking garages will provide parking for NASED residents, visitors, and patrons. A central 'main street' creates an interior spine of circulation, with on-street parking and lined with retail and commercial activities. A balance of multi-modal transportation options must be accounted for in the design, with ease of access for vehicles and pedestrians being considered.



- NEW SITE BUILDINGS
- NEW PARKING (STRUCTURES/LOTS)
- SITE ENTRY POINTS
- SITE EGRESS POINTS
- INTERNAL CIRCULATION
- PEDESTRIAN CIRCULATION
- BUS STOP / HART STATION

Full Build Event Day Ingress

The full-build event ingress for NASED will need to be substantially different from the parking system in place at the existing stadium today. The need for allowing residents and visitors on site at all times means that the parking gates will be eliminated. Instead, visitors to NASED will be able to utilize specified parking garages for event parking. Parking signage on site will indicate to visitors which garages they should park in, and technology such as smart phone apps to register/pay may be employed.

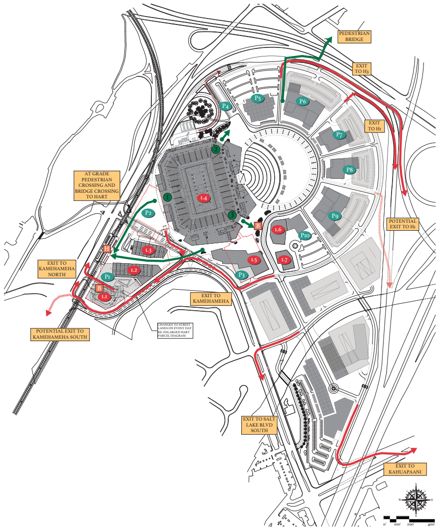


PHASE 2 and 3 - INGRESS

- STADIUM GATE A AND PARKING
- STADIUM GATE B AND PARKING
- STADIUM GATE C AND PARKING
- STADIUM GATE D AND PARKING
- PEDESTRIAN PATHWAYS

Full Build Event Day Egress

Traffic congestion related to people departing from stadium events is a nearly universal issue for large entertainment venues. The NASED strategy for mitigating traffic congestion takes several approaches. First, all exit gates across the site are utilized in conjunction with the reversable traffic flow on Salt Lake Boulevard to help visitors leave quickly. Second, the function of the site as an entertainment district means that visitors will have a variety of options for entertainment or food and beverage options for after events. Rather than fighting through the crush of traffic leaving a concert, visitors will be able to stop for a bite to eat or a drink prior to their departure. The multiple transportation options (such as ride-sharing, driving, bus, HART, etc.), as well as the numerous on-site amenities will provide relief to vehicular congestion.



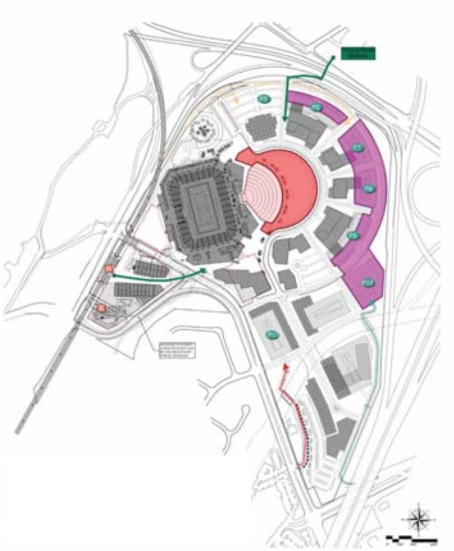
PHASE 2 and 3 - INGRESS

- 🟧 STADIUM GATE A AND PARKING
- 🟥 STADIUM GATE B AND PARKING
- 🟦 STADIUM GATE C AND PARKING
- 🟧 STADIUM GATE D AND PARKING
- 🟩 PEDESTRIAN PATHWAYS

Full Build Swap Meet

As the NASED development reaches full-buildout, the expectation is that there will no longer be large expanses of open surface parking lots. Instead, the Swap Meet and events such as the 50th State Fair will be able to take advantage of the new amenities featured in the overall master plan design. The 50th State Fair could potentially use the amphitheater rather than the Lower Hālawa Lot which could open opportunities such as including concerts and performances on the amphitheater stage in conjunction with the Fair.

The Swap Meet will be able to take advantage of the peripheral parking structures which will be constructed to serve residents, events, and businesses within NASED. The lower level of all parking garages will be elevated to allow for ground-level retail, as well as covered areas for Swap Meet vendors. In addition to the option of having a covered stall, other Swap Meet amenities such as electrical power could be provided. These amenities would not only serve the Swap Meet, but could also be used for tailgating at UH games or other stadium events.



- ▨ SWAP MEET
- ▨ 50TH STATE FAIR
- → STADIUM GATE A ENTRY
- → STADIUM GATE B ENTRY
- → STADIUM GATE C ENTRY
- ▨▨ BUS STOP / HART STATION

Salt Lake Boulevard Modifications

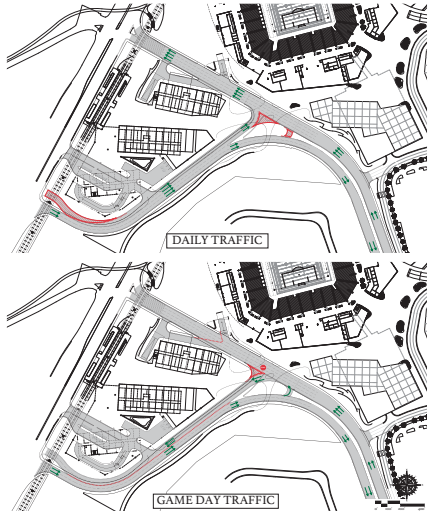
The highest amount of all pedestrian and vehicular traffic for the NASED development occurs between the locations of the Aloha Stadium HART Station and the eventual location of the new Stadium. Salt Lake Boulevard is a critical traffic artery that presents both issues and opportunities for alleviating traffic backups while facilitating maximum pedestrian circulation.

A key component of managing the thousands of visitors who visit the entertainment district will be the manipulation of Salt Lake Boulevard. Pedestrian bridges crossing Salt Lake Boulevard provide two key benefits. First, from a safety perspective, a pedestrian bridge keeps visitors separate from potential hazards associated with mixing thousands of visitors and vehicles. Second, the complete separation of pedestrian and vehicular traffic provides visitors with the ability to cross the street without impeding the flow of traffic. Maintaining as much traffic flow as possible is critical to ensuring traffic jams are minimized due to event or everyday traffic.

The 'Essex' portion of Salt Lake Boulevard is envisioned to be altered to allow for dynamic lane changes. Similar to the dynamic lanes being implemented successfully across Oahu such as the rush hour lanes in the mornings along Kalaniana'ole Hwy in east Honolulu, the alterations to Salt Lake Boulevard would allow for gameday traffic to more easily flow depending on the timing of the event.

Daily traffic flow would maintain nearly identical flow and functionality as exists on the current site. One way traffic would flow east/mauka along the southern 'Essex' loop of Salt Lake Boulevard, while the typical makai-bound traffic would maintain standard flow to the T-intersection with Kamehameha Hwy. However on game days the Essex portion of Salt Lake Boulevard would allow traffic flow to change depending on the timing of the event. For example, at the beginning of a UH game when traffic flow into the event is highest, all lanes of the Essex portion of Salt Lake Blvd would feed visitors into the event. At halftime or near the end of a large event, outbound traffic would be able to use half of the Essex portion of Salt Lake Boulevard to allow more visitors to quickly exit from an event. The main idea is to allow more traffic to flow into the NASED development leading up to major events, while also being able to change at an appropriate time and allow for a higher volume of visitors to exit at a faster pace.

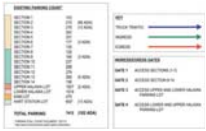
Additional lanes needed to be added to Salt Lake Boulevard would most likely push the boundaries of the road towards the new Aloha Stadium HART Station on the HART parcel of the NASED development. While this land is among the highest value real estate, additional lanes of dynamic traffic would provide traffic relief and community benefits which would benefit the entire development.

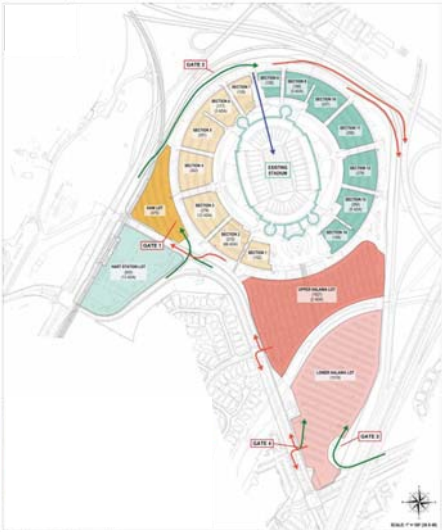


Traffic Flow
Traffic Barrier

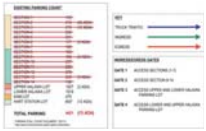
Existing Parking and Gates: Stadium Event Day

This diagram, and the next series of parking diagrams, depict a possible scenario for parking and event logistics during the build-out of NASED. The final decision for the amount of parking and traffic mitigation measures will occur between the Stadium Authority and the selected developer.

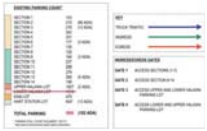


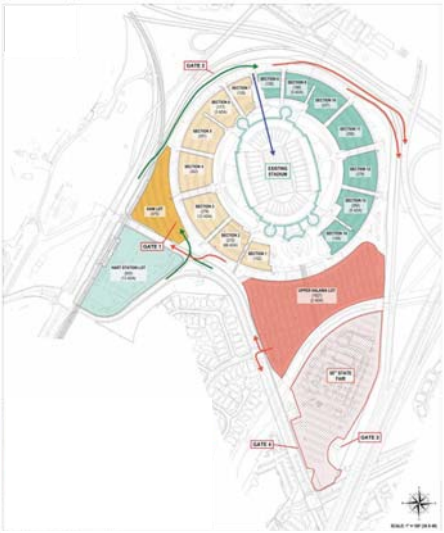


Existing Parking and Gates: Swap Meet

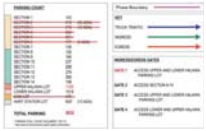


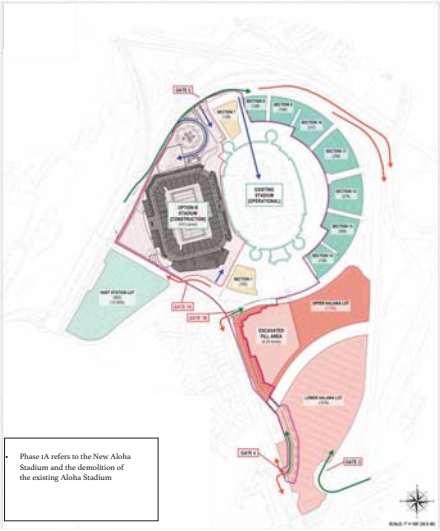
Existing Parking and Gates: 50th State Fair





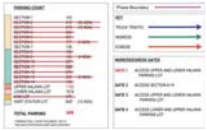
Phase 1A.1 Parking and Gates: Stadium Event Day

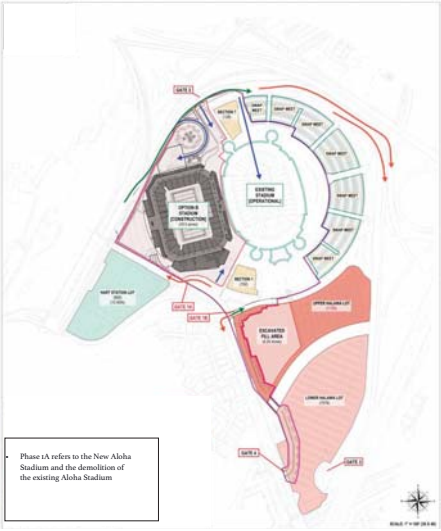




- Phase 1A refers to the New Aloha Stadium and the demolition of the existing Aloha Stadium

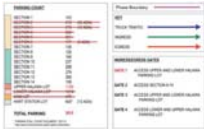
Phase 1A.1 Parking and Gates: Swap Meet

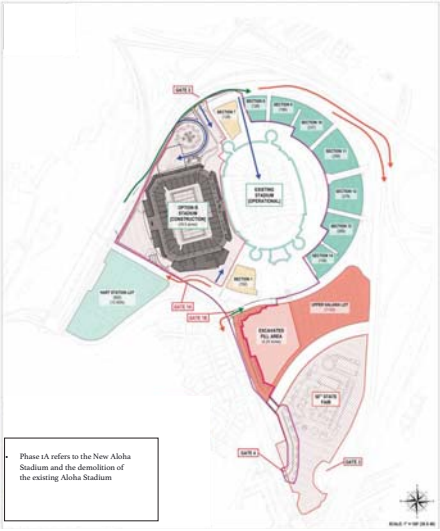




- Phase 1A refers to the New Aloha Stadium and the demolition of the existing Aloha Stadium

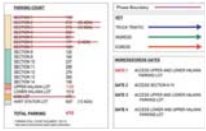
Phase 1A.1 Parking and Gates: 50th State Fair

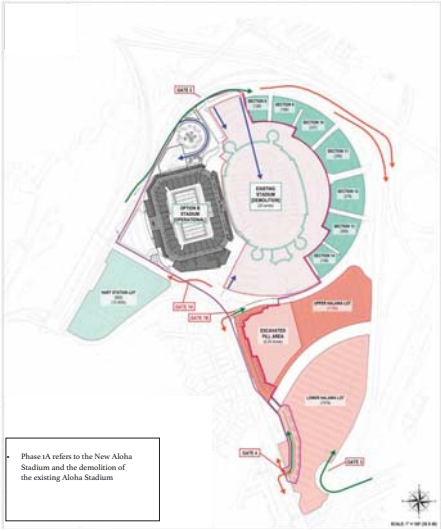




- Phase 1A refers to the New Aloha Stadium and the demolition of the existing Aloha Stadium

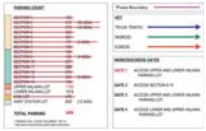
Phase 1A.2 Parking and Gates: Stadium Event Day

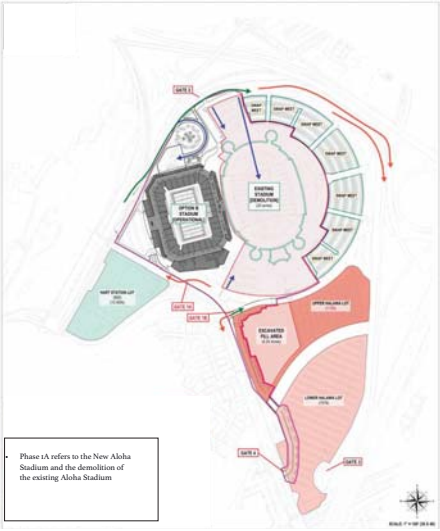




- Phase 1A refers to the New Aloha Stadium and the demolition of the existing Aloha Stadium

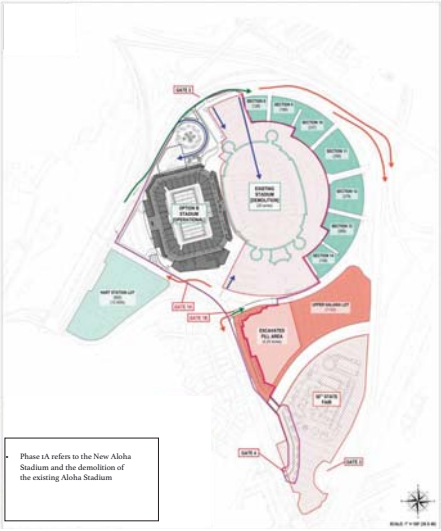
Phase 1A.2 Parking and Gates: Swap Meet





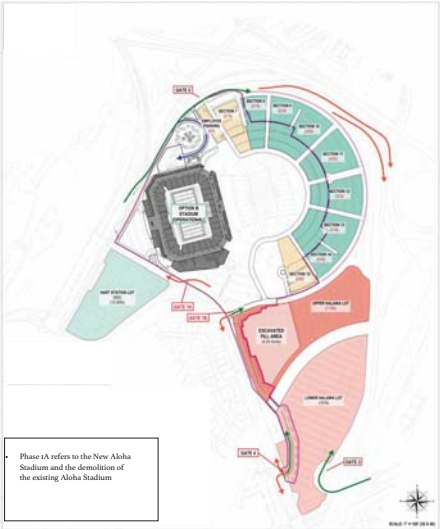
- Phase 1A refers to the New Aloha Stadium and the demolition of the existing Aloha Stadium

Phase 1A.2 Parking and Gates: 50th State Fair



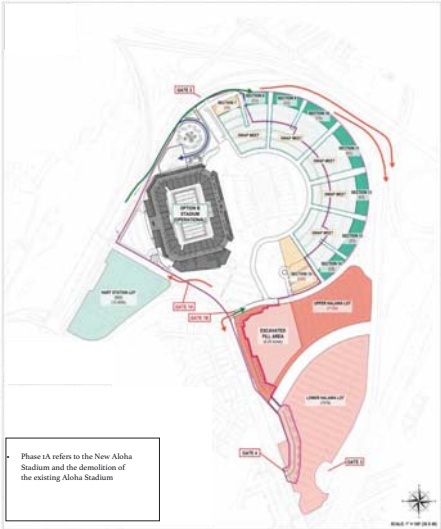
- Phase 1A refers to the New Aloha Stadium and the demolition of the existing Aloha Stadium

Phase 1A.3 Parking and Gates: Stadium Event Day



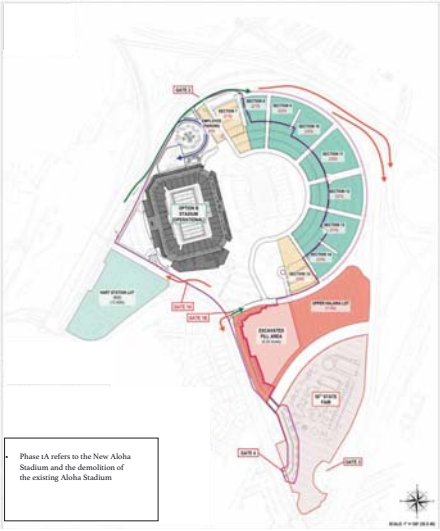
- Phase 1A refers to the New Aloha Stadium and the demolition of the existing Aloha Stadium

Phase 1A.3 Parking and Gates: Swap Meet



- Phase 1A refers to the New Aloha Stadium and the demolition of the existing Aloha Stadium

Phase 1A-3 Parking and Gates: 50th State Fair



- Phase 1A refers to the New Aloha Stadium and the demolition of the existing Aloha Stadium

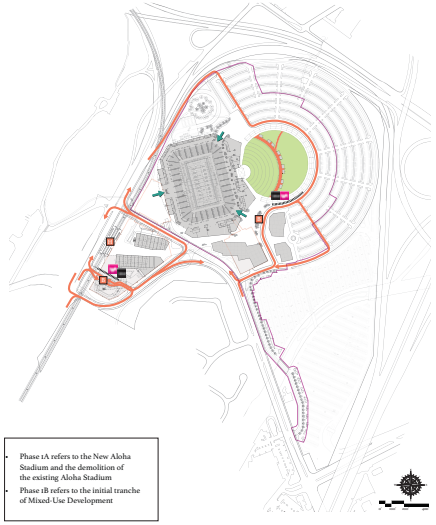
PUBLIC TRANSIT

The Hālawa Area TOD Plan establishes a set of guidelines which are meant to improve and accommodate all forms of transportation within the entertainment district. The successful implementation of multi-modal transportation strategies serves to benefit both the users of NASED and the adjacent residential and commercial stakeholders. The essence of the connectivity strategies encompassed in the Hālawa TOD are promulgated throughout the NASED PMP. A central emphasis of the NASED PMP is a strong, high-volume connection between the new Aloha Stadium HART Station and the new Aloha Stadium. This connection allows visitors to walk throughout indoor/outdoor retail spaces and restaurants via either at-grade or elevated pedestrian walkways.

In addition to the high-volume pedestrian walkways provided to connect the HART Station and Stadium, pedestrian connectivity throughout the NASED development will be key to its success. Pedestrians must be able to traverse the development easily and via the most direct paths possible. The NASED PMP takes into consideration the need for pedestrian circulation throughout the site to accommodate all site functions related to both stadium events and the residential, commercial, and retail operations within the development. However, it is critical that the NASED also includes cohesive pedestrian connections for the neighboring residential participation in the community benefits and amenities provided in the development. To complement the pedestrian circulation, bicycle paths and connectivity is also provided throughout the NASED PMP. These bicycle paths also serve to connect the neighboring areas with the development while providing additional opportunities. The Pearl Harbor Historic Trail which terminates directly beside the NASED development can be extended and connected down to the Pearl Harbor Visitor Center. The NASED provides a perfect stop along the bike trail, and conversations with the US Navy have indicated their willingness to assist with facilitating the creation of the bicycle trail connections.

Phase 1A & 1B Multi-Modal Traffic

The Aloha Stadium HART Station provides more benefits than simply bringing riders to the NASED from other stations. The Bus has also established dedicated bus stops for the new station, and riders will have the ability to take either the train or the bus to events at the stadium such as UH games, or even just to eat a restaurant within the district. High-volume event traffic will be reduced by rail and bus, plus the NASED PMP seeks to actively promote ride-sharing platforms such as Uber or Lyft. Dedicated ride-sharing locations can be assigned throughout the district to align with key landmarks. In the NASED PMP, ride-sharing locations are arranged near the HART Station, on either side of the new stadium, and in the lower Hālawa parking lot towards the south end of future phase development. Additionally, on-site people movers are envisioned due to the scale of the development. The goal of having hundreds of residential units distributed throughout the development would justify the people moving shuttles and provide accessibility across the development to all.

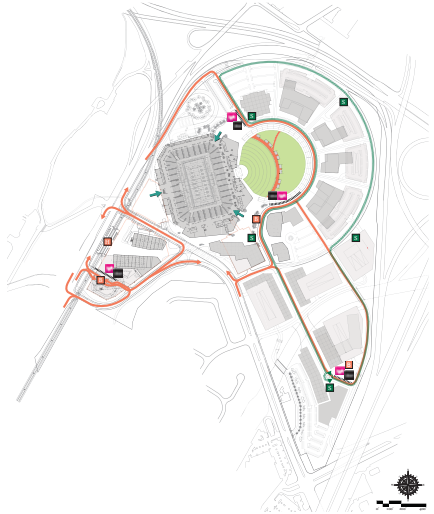


- STADIUM ENTRY GATES
- HART STATION
- BUS STATION / STOP
- BUS ROUTES
- RIDE SHARE PICK-UP / DROP-OFF
- PHASE BOUNDARY

- Phase 1A refers to the New Aloha Stadium and the demolition of the existing Aloha Stadium
- Phase 1B refers to the initial tranche of Mixed-Use Development

Full Build Multi-Modal Traffic

The most obvious transportation method for many visitors to both the current and future Aloha Stadium will be car. Vehicular traffic is an identified issue for the existing Aloha Stadium, with traffic congestion being a real issue. The true goal of a successful multi-modal transportation strategy in the NASED PMP is to reduce as much vehicular traffic as possible while providing the most flexibility for all visitors to the development. Rail, bus, bicycle, pedestrian, ride-sharing, and other means of transportation will all assist in providing a better experience to both visitors and neighbors to the NASED.



- STADIUM ENTRY GATES
- HART STATION
- BUS STATION / STOP
- BUS ROUTES
- RIDE SHARE PICK-UP / DROP-OFF
- ON-SITE PEOPLE MOVERS

3.7

VIEW SHED ANALYSIS

The goal of the design of the district is to preserve the value of the overall viewsheds from the surrounding areas. Because there is already a stadium currently on site, the views will shift but should not be diminished. To accomplish this, the master plan must follow building height and density requirements throughout the site to create a dynamic addition to the views from the surrounding areas while also paying special consideration to framing key natural and man made elements that are valued in current viewsheds. This same care should be made when considering views from the site as well. Using massing to frame views of the Koolau Range, Pearl Harbor, and other important features surrounding the site is imperative.

Beyond the spatial considerations of massing on site, the design of new buildings and open spaces must concentrate on positively impacting views both on and off site. No blank or unadorned walls should be left to spoil a view. The addition of vegetation, artwork, or appealing screening elements can all be used to eliminate any eyesores. There should be locations throughout the site that are specially designed to emphasize appealing views surrounding the site such as views from the concourse levels of the new stadium that look over Pearl Harbor or views from parks and gardens that frame the Koolau or Waianae Ranges.

View shed studies are made by the exploration of the surrounding areas of the site and identifying where important views and vistas currently exist. A conceptual model of the new development is then superimposed in images from those locations in order to determine the affect the development will have on the views. Eight view shed studies were completed to examine the impact the NASED development will have on the views surrounding the site. Additional view shed studies should be done with any major changes to the design of the master plan.

The current studies are taken from eight publicly accessible locations:

1. from Rainbow Bay Marina, 2. from Aiea Bay State Recreation Area, 3. from Aiea Heights Dr. near Kihewa Pl, 4. from the corner of Poko Rd. and Poko Pl, 5. from the corner of Halawa Heights Rd. and Ulune St, 6. from the corner of Kahuapaani St. and Salt Lake Blvd, 7. from Ohenana Loop, and 8. from the corner of Kalaloa St. and Salt Lake Blvd.

These locations can be seen on the following map.

Concept Site Masterplan, Phase 1A and 1B

3.8

CONSTRUCTION PHASING

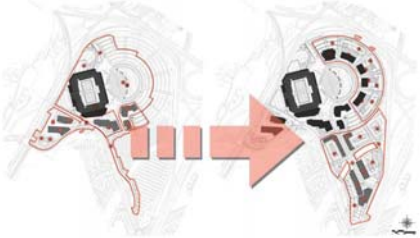
Construction Phasing

Construction Phase 1A and 1B

The Construction Phase 1 of the concept PMP is designed to accomplish the following:

- Create connectivity with-in the site and to the surrounding areas. A network of pedestrian friendly walk-ways and bicycle paths are juxtaposed over the new street grid. In most cases, they are separate, creating safe routes for pedestrians to travel throughout the site, while also allowing for vehicular traffic to flow more freely. In other areas, they exist in the same location, running parallel to create a typical main street feel, mixing cars and people and retail shops. These pathways also reach out to the surrounding communities to allow residents that do not live on site to access the site very easily and enter directly onto these pedestrian routes. The Pu'uwai Momi and Makalapa neighborhoods south of the site, the Pearl Harbor Visitor's Center and Pearl Harbor Bike Path west of the site and the Aiea Neighborhood north of the site all have pedestrian bridges over the busy roadways directly into the Hālawa trail network.
- Provide vehicular ingress and egress to the site with minimal impact on the existing highway network. The Hālawa site is currently set up with 4 gates for access to parking and events. With the changing of the function of the site from a purely Stadium site to a Mixed-Use site, these gates need to adapt. The PMP maintains access to the site from Kamehameha Highway through Gate 2 at the north end of the site. The PMP improves the access to the site from Salt Lake Boulevard and Kahuapaani St at Gate 3 and Gate 4 by moving the gates further into the site itself and increasing the amount of stacking available for vehicles on event days. The PMP changes the use of Gate 1, formerly one of the primary access points of the site, relocates it and assigns it to a small number of VIP vehicles entering close to the stadium. The roads and highways around the site are unchanged.
- Maintain activities on site during the course of construction and beyond. The use of the existing Aloha Stadium needs to be maintained at a level that is commensurate with the needs of the events scheduled over the duration of construction of the new stadium. University of Hawaii Football home games will need to be played and scheduled concerts will need to be accommodated. Additionally, the Swap Meet must occur every Wednesday, Saturday and Sunday and the 50th State Fair will be held in the summer. The PMP allows for all of these conditions by locating the stadium west of the existing stadium and concentrating the construction phase 1 development on the HART site and directly around the new stadium.
- Allow for a seamless transition to future development. The PMP construction phase 1 is designed as part of a whole site master plan. This is critical creating continuity between the initial development and any future development on site. For the site to reach its full potential, it must be a cohesive whole with all of the connections and roads and mix of uses working together. The PMP is divided into conceptual districts by phase, but these districts all blend together to create the full Hālawa development.

Concept Site Masterplan, Full Build

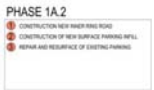


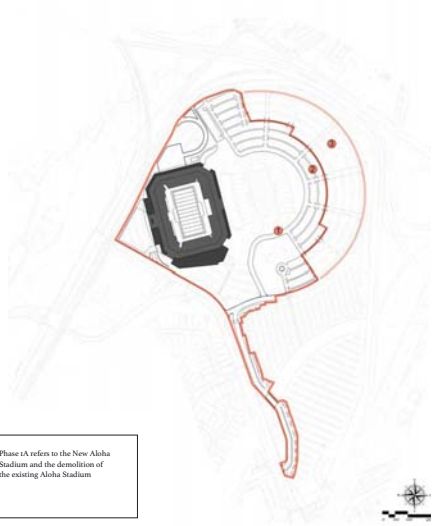
Phase 1 – Sequence A

1) Remove Stadium Gate 1 and create new curb cut for site access from Salt Lake Boulevard.
2) Access/Stacking road improvements along Salt Lake Blvd and relocate Stadium Gate 4. This includes a new or expanded western bridge over Hālawa Stream.
3) Access/Stacking road improvements along H2 and relocate Stadium Gate 3.
4) Clear the site to create a construction zone for the new stadium.
5) Provide pedestrian protection along temporary pedestrian routes from the HART station and the existing parking lots to the existing stadium.
6) Provide any temporary measures to keep the existing stadium operational, specifically the west stands.
7) Modify utility routes in the area of the new stadium.
8) Excavate for new stadium and loading dock area. Stockpile on site excavation material for us as future fill.
9) Construct new stadium and loading dock area, working from west to east.
10) Construction of 3 new entry gate plazas at the Stadium Makai Gate, Stadium North Mauka Gate and Stadium South Mauka Gate.
11) Optional – construct new 2-level below grade parking structure under the Stadium Makai Gate Plaza for VIP and media entry.
12) Relocate construction boundary to the area surrounding the existing stadium.
13) Provide new pedestrian protection along new pedestrian routes from the HART station and the existing parking lots to the New Aloha Stadium.
14) Demolish existing Aloha Stadium. Steel to be recycled. Concrete to be processed / ground up on site and used for site base material for future roads and development.

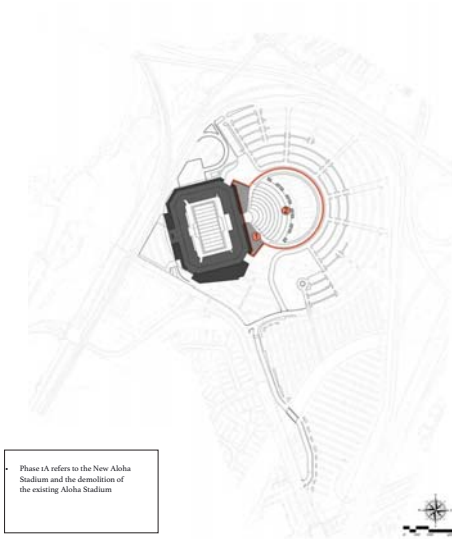
- Phase 1A refers to the New Aloha Stadium and the demolition of the existing Aloha Stadium

15) Fill / grade hole left by old stadium, provide turf for level circular open-space park.
16) Optional – fill / grade sloped or terraced amphitheater bowl in the place of the old stadium, stage area against the mauka side of the stadium.
17) Construct new parking, inner access road, connect to existing parking.
18) Patch and repair concrete curbs and gutter, re-asphalt and re-stripe existing circular parking lot.





- Phase 1A refers to the New Aloha Stadium and the demolition of the existing Aloha Stadium



PHASE 1A.3 - OPT

1. CONSTRUCTION OF NEW STADIUM CLUB / AMPHITHEATER BUILDINGS
2. CONSTRUCTION OF NEW AMPHITHEATER SUPPORT BUILDINGS / TERRACING / TRELLIS

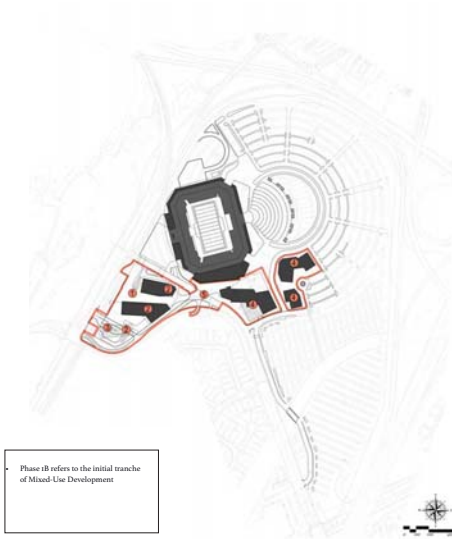
NOTE: THE AMPHITHEATER IS NOT PART OF THE BASE STADIUM NOR THE ANCILLARY DEVELOPMENT PROGRAM OUTLINED IN THE MARKET STUDY

- Phase 1A refers to the New Aloha Stadium and the demolition of the existing Aloha Stadium

Phase 1 – Sequence B

(note: Sequence B likely to be done in smaller phases or individual buildings)

1) Clear the HART site and area southeast of new stadium to create a construction zone for mixed-use development.
2) Provide pedestrian protection along temporary pedestrian routes from the HART station and the parking lots to the new stadium.
3) Provide temporary bus terminal and connection to HART station. Provide temporary parking location for HART parking (650 cars).
4) Demo existing parking and bus terminal; clear the HART site.
5) Construct new bus terminal, two levels of retail, parking structure, residential and hotel towers.
6) Optional – construct additional drive lanes along the southern (eastbound) portion of Salt Lake Blvd to improve traffic flow on event days. Lanes to be constructed on the HART parcel.
7) Construct pedestrian bridge over Salt Lake Blvd from the HART parcel to the Hālawa Parcel.
8) Construct partial below grade parking structure and buildings surrounding the South Mauka Gate of the new stadium.
9) Expansion of stadium program on mauka side of stadium, adding two restaurant / clubs and roof top terraces.
10) Relocate existing Volcano sculpture.
11) Optional – construct pedestrian bridge over the outer ring road to facilitate pedestrians crossing from parking lot to new stadium without mixing with incoming traffic.



PHASE 1B

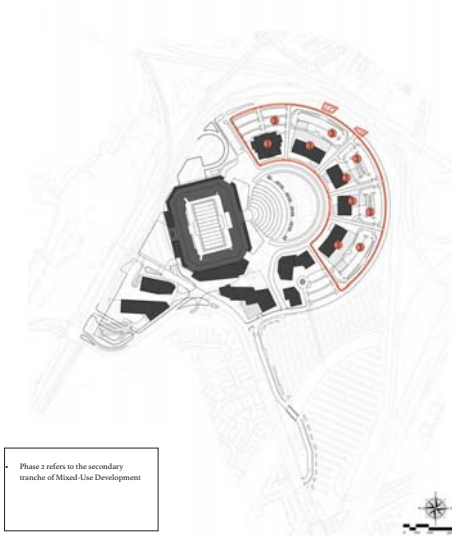
1. CONSTRUCTION OF BELOW GRADE PARKING ON HART PARCEL
2. CONSTRUCTION OF NEW RETAIL / RESIDENTIAL / HOTEL TOWERS ON HART PARCEL
3. RELOCATION OF BUS STATION
4. CONSTRUCTION OF NEW BELOW GRADE PARKING / BUILDINGS SOUTHEAST OF STADIUM
5. CONSTRUCTION OF NEW LANE BRIDGE OVER SALT LAKE BOULEVARD

- Phase 1B refers to the initial tranche of Mixed-Use Development

Phase 2

(note: Phase 2 likely to be done in smaller sub-phases or individual buildings)

1) Done sequentially, for each section of the circular parking lot around the new circular park:
   b. Clear the site to create a construction zone for mixed-use development.
   c. Provide pedestrian protection along pedestrian routes from the parking lot to the new stadium.
   d. Remove existing curb and gutter and asphalt parking lot. Excavate for below grade parking.
   e. Construct new parking structure, retail, office and/or residential buildings.
2) Repeat for each group of buildings (parking, retail, office, residential) around the new circular park.
3) Construct new pedestrian bridge across H201.
4) Expand, patch and repair, outer ring road.
5) Remove stadium entry gate 2.

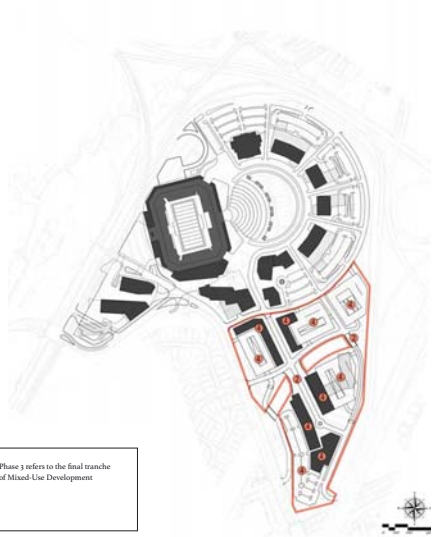


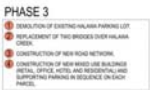
- Phase 2 refers to the secondary tranche of Mixed-Use Development

Phase 3

(note: Phase 3 likely to be done in smaller sub-phases or individual buildings)

1) Create new grid of roads through the North and South Hālawa parking lots. This includes the replacement of two bridges across Hālawa Stream.
2) Done sequentially, for each newly created parcel or "city block":
   a. Clear the site to create a construction zone for mixed-use development.
   b. Provide pedestrian protection along pedestrian routes from the parking lot to the new stadium.
   c. Remove existing curb and gutter and asphalt parking lot. Excavate for below grade parking.
   d. Construct new parking structure, retail, office and/or residential buildings.
3) Repeat for each group of buildings (parking, retail, office, residential) in phase 3.
4) Remove stadium entry gate 3 and stadium entry gate 4.





- Phase 3 refers to the final tranche of Mixed-Use Development

3.9

SITE MIXED-USE PROGRAM

Future Development

Future Development of the PMP brings the total area of mixed-use development to 3,200,000 GSF. The program has the ability to evolve over time, based on new market analysis and need.

Phase 2

As shown in this Programmatic Master Plan, the Construction Phase 2 consists of 1- and 2-story retail and high rise residential towers built around the Amphitheater Park. The retail opportunities face out to the park and the residential towers built above them have views in all directions. Behind the retail are located new parking garages. These garages must account for the stadium parking lost to the new development, the retail and the residential requirements. They are designed to be segregated into 3 areas: below grade secure parking for residents, at grade, super-elevated height for service and retail and Swap Meet, and upper levels for stadium parking.

As we move from phase 1 into phase 2 across the amphitheater space, the seamless transition can be seen in a few key areas. The first is through the living streets seen along the North and South end of the amphitheater. These curb less streets are treated with a similar pavement to the pedestrian hardscape rather than the main roadways in order to slow vehicles down and give more of a walkable community feel to the space. The next transition occurs along the inner ring road. The amphitheater allows activities to engage this outermost edge of the inner ring road through the use of a trellis structure. The inner ring road has drive lanes, parallel parking, and a bike lane closest to the retail fronting the opposing side of the street. On the outside edge of the inner ring road, an outdoor retail walking experience was created to allow people to meander along this arc and explore the retail, restaurant, and entertainment spaces. Above these retail spaces are residential units that are meant to be used as mixed use live/work buildings. They gradually taper upward as they move away from the amphitheater to ensure reverberation is reduced and that a barrier wall condition is not created. As these building taper back,

open green lawns as extensions of the lanais are created for excellent views during amphitheater events. The large plaza to the North of the amphitheater was also created to allow pedestrians to easily flow across the living street and connect directly to the stadium plaza and amphitheater. This gives an open space for activities and events to take place.

Looking at the North end of phase 2 near this large plaza and zooming out, we can begin to see how the building massing of the residential towers tapers down in opposing directions, simulating the mountainous ridge conditions that create the backdrop of the mauka view. The residential tower closest to the stadium aligns with the top height of the stadium as the starting point for the tapering to begin to relate contextually and gradually grow from one phase to the next. Zooming out further, it can be seen that all of the residential towers follow this same language and slowly decrease in height moving from North to South. This was a response to looking at the entire masterplan and having the lowest points in the center of the site increase toward the site extents. It should be noted that there are 3 large parking structures in phase 2 that act as podiums for the residential towers. These parking garages are treated with wood screens and foliage coverings to conceal the inner nature of the garages and give a natural exterior presence. The parking garages front the outer ring road, which is a main accessway through the site. This outer ring road has dive lanes, pull-in parking, bike lanes and sidewalks. The pull-in parking located here can be used for tailgating before games and for vendors tents during swap meets. It should be noted that the first 2 lanes of parking inside the garages closest to the outer ring road will also be utilized as vendor stalls during swap meets, offering an indoor/outdoor walking space covered from the elements.

There is an interstitial pedestrian pathway that occurs between the retail and parking garage space. This pedestrian gallery walk flows the entire arc spanning between the inner and outer ring roads and creates a safe

walking experience through phase 2. Imagined also as an outdoor mall experience, both sides of this pathway are lined with retail/restaurant/entertainment tenants. This gallery or mall space expands and contracts at various places along the arc. Contracting to create tighter, more intimate zones of shopping and expanding as you reach plazas along the way where living streets run through and restaurants occur on the corner lots. One such plaza opens to a pedestrian overpass bridge connecting across the highway that also has a drop off zone. These plazas are envisioned as public spaces for interaction with ample seating and landscaping. At each of these plaza openings, the perimeter is wrapped with retail tenants to bring attention and added energy to these areas. While moving through this gallery space, there are overhead shading

canopies that periodically occur to provide protection from the elements and make for a better walking experience.

Moving up from the ground floor along this interstitial pathway, above the retail tenants below are residential units and buildings varying in height from one to three stories. These units are all interconnected through a raised pathway acting as a bridge that makes this community better connected and allows residents an exclusive way to navigate through the complex.

Moving to the end of the interstitial pathway at the southernmost end of phase 2, you will reach a plaza that connects all 3 phases of the masterplan. Where these all converge, there are connections and pathways to allow travel in any direction and to any destination within NASED. Looking at this location from above, one could move through the interstitial plaza to the right, to the outer ring road to the bottom right, into the inner ring road to the top right, to the stadium towards the left, across the bridge to the bottom, or down the grand staircase to the bottom. This plaza in the previous location of the Volcano sculpture of the old Aloha Stadium and is retained in this location although raised up to meet the new grade elevations. This is now at the center of the plaza and serves as an anchor of the site.

Phase 3

As shown in this Programmatic Master Plan, the Construction Phase 3 consists of a main street axis terminating in the South Mauka Plaza at the north and retail, residential and entertainment at the south end of the site. Office space and residential is provided in a live-work-play configuration along the main street. As with phase 2, any stadium parking that is lost to new development is replaced in new structured parking garages.

Access to the site after full build remains the same as before, however stadium parking access gates are no longer required. All daily parking and event parking will be handled automatically at in the structured parking garages with mobile apps and technology.

The main transition from phase 2 into phase 3 occurs from the Volcano plaza along the south edge at the bridge and staircase. Working with the gradual downward slope of the site towards the stream, pedestrian bridges are used to seamlessly transition from one block to another and keep pedestrian from crossing vehicular intersections. The one area where this does happen is at the grand staircase, due to accessibility to the largest parking garage for the stadium. This wide staircase lined with planters, vegetation, and trees leads pedestrians to the third level of the garage that is accessed at ground level from the intersection. The parking garage has six levels of parking and is sunken into the landscape, as this is the largest grade change location on site. Another access point to the garage is from the outer ring road, where one would enter into the fourth level of parking which is double height in order for this entire level to also be used for Swap Meet vendors. At the bottom most point of the garage near the stream, vehicles will drive into the first level of parking. Its important to note that the entirety of the garage roof is utilized for a solar PV array for site energy production.

Moving back to the volcano plaza, the next connection is the bridge that has been called the HI-Line. This pedestrian bridge is effectively used to move occupants

throughout the site and especially for garage access. This bridge takes off from the volcano plaza and lands on the roof deck of the cultural/education center before branching out into two separate bridges that extend over another road and bring pedestrians to level 4 of the parking garage. In a flowing manner, the HI-Line weaves above the Io'i field connecting multiple roof decks of the cultural center and provides amazing views of the landscape below. It also winds its way across the stream and lands at a plaza, making an effective connection for pedestrians to utilize for moving between all three phases.

The cultural/education center that the HI-Line lands upon, is located in the center of the site and wraps around the Io'i field, while also extending out into it. This building gradually grows out of the ground draws lines from the Io'i field reflected in the form and engages with the landscape for cultural/educational opportunities. The roof deck is a pavilion space that offers scenic views, circulation for pedestrians, furniture for gathering, and pop-up eateries. Below this, in the interior space, are locations for retailers, educational classes, cultural learning, and rentable space. Where the building extends into the Io'i field, a space is created that offers a more private experience with the Io'i and could be used for community gardening.

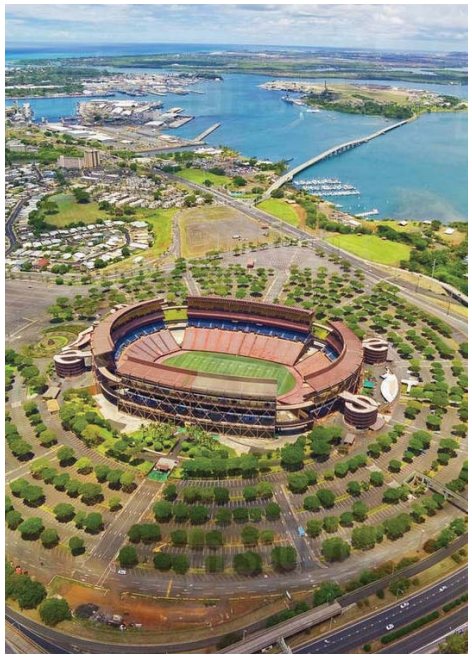
Transitioning into the Io'i space, it should be noted that this was the exact location of a historic Io'i and by recreating this condition, we are both restoring an ecological system and bringing back remnants of the past that once existed here. One other strong reason for this Io'i field is due to the nature of the sites slope, half of this field will be used for the phytoremediation (natural cleaning and restoration) of the site water collected from all of the green roofs and greywater. Pathways and hardscape are sporadically placed throughout the fields to encourage community interaction, engagement with the land, and to promote healthy ecosystems.

A very prominent feature of phase 3 is the main access road or mall that extends from the inner ring road ending point all the way through phase three to a main central node. Looking at the streetscape from above, you can see that there are driving lanes, bicycle lanes, parallel parking stalls, and a large green median space used for phytoremediation of the street water before being released into the stream. Because this is also a curb less living street with hardscape paving, this effectively removes the need for gutters and diverts all of the street water collected down the sloped road.

There is another pedestrian bridge at the north end of the mall accessway that carries pedestrians across the second level as an extension of the pedestrian experience on the mall. This northern portion of the mall above the stream has retailers lining the roadway on both sides with larger tenants at the corner spaces. Above this is a second level of retail spaces covered by an overhead canopy so these spaces can be used during any weather. The building closer to the Io'i has a third level of office spaces that overlook the Io'i and has PV covering the roof. The backside of this structure is covered by green walls fronting the Io'i. The building on the opposing side of the street is wrapping around a parking structure and there are inlets and outlets from the garage to both level of retailers. The parking garage has a rooftop park and garden and is connected directly to the office building above it. The four levels of office spaces above grab language from the contours of the Io'i field and are also populated with PV arrays on their roofs.

The mall south of the stream carries similar structure through with double height retailers and covered walkways, but then extends into the Skywalk pedestrian bridge. This skywalk connects retailers, garages, residential towers, and hotels together so that pedestrians can have access to whatever they need through this raised level without stopping traffic flow. This bridge circulates above the main node at the end of the mall which contains a roundabout for better circulating traffic. This node and the entire mall can be closed off during gamedays through retractable bollards that still allows for site circulation. The roundabout node has plazas on every side and is intended to be an active pedestrian experience with ample seating, water features, and landscaped berms and pathways. Looking at this node from the main entrance off Salt Lake Blvd, a hotel is to the left and to the right is a hotel and residential mixed use building that share an amenity deck. Both of these sit atop a podium parking garage wrapped with wood slat patterns and foliage to hide to internal workings and promote a natural feeling.

Looking at the plaza now where the HI-Line lands south of the stream, it can be noticed from an aerial view that this is a residential complex with three residential towers. Two of which share a large amenity deck/park that overlooks the stream and Io'i and one tower stands separate. The plaza created in front of these towers is surrounded by retail, entertainment, and restaurant spaces. This creates a desirable place for stadium goers and residents to come to at the ending point of the HI-Line. The landscape of rolling hills and seating provided for overlooking the stream and Io'i, activate this plaza from all sides.



SITE GRADING

The current site consists of higher elevation around the North edges and lower surrounding Hālawa Creek and the Lower Hālawa Lot. The proposed grading will create an upper plateau extending from the new HART site, around the new stadium, to the Eastern edge of the site. Salt Lake Blvd will slope away from the HART site, allowing for adequate clearance beneath a gently sloping pedestrian bridge connecting the HART site and new stadium plaza. Salt Lake Blvd will continue to slope down until reaching the regraded lower Hālawa Lot at +20'. The Upper and Lower Hālawa Lots will require minimal regrading to ensure efficient site drainage into Hālawa Creek and buildings will avoid basement excavation.

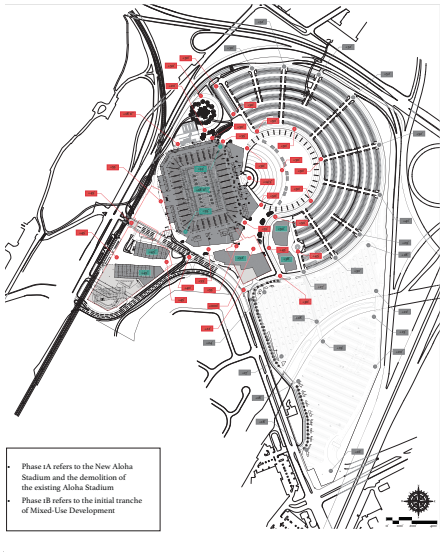
The existing stadium's field level is at +20' and the surrounding parking lots are between +27' near the volcano and +5' at the perimeter. The new stadium site, north loading dock, P1.3 and P1.5 will be excavated down to field level, +18'6, and +55' at the three stadium entrances. The existing stadium field level will be excavated down to 14'6" to accommodate the new amphitheater while the exfill from the new stadium will infill and level the surrounding lots and perimeter road to +50'. The parking structures surrounding the amphitheater will require one level to be excavated to accommodate the new parking demands. Parking structure P3.1 is situated at the site's largest change in grade and therefore can bring event day cars in at both major grade levels, +50' and +20'.

Phase 1A & 1B Site Grading Analysis

The conceptual design of the PMP seeks to establish the Field/Event Level of the new facility to be equal with the Field/Event Level of the existing facility. Once the new facility is constructed and the existing stadium is demolished, the Event Level of the proposed amphitheater will match the Field/Event level of the new stadium. The excavated material from the construction of the new stadium can be used to fill the depression left by the existing (to be demolished) stadium, and the fill will be sculpted into the form of the amphitheater.

The concourse level of the new stadium will be at the same grade as the surrounding site in order to create an integrated connection between the stadium and surrounding development. Additionally, by moving the new stadium to the west/makai of the existing stadium, the site topography allows for the potential to create a minimally-sloped land bridge across Salt Lake Boulevard and into the new facility.

The process of excavation and storage of excavated fill on-site will require dust mitigation and planning to ensure the adjacent residential neighborhoods are not covered in construction dust.



- Phase 1A refers to the New Aloha Stadium and the demolition of the existing Aloha Stadium
- Phase 1B refers to the initial tranche of Mixed-Use Development

XXXX XSTG SPOT ELEVATION

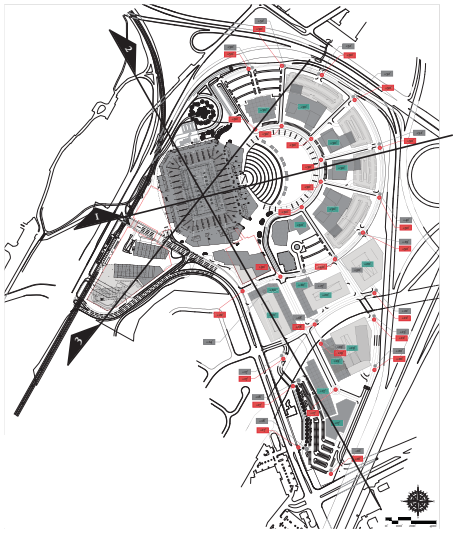
XXXX NEW SPOT ELEVATION

XXXX BUILDING AT-GRADE FLOOR ELEVATIONS

Full Build Site Grading Analysis

The full buildout of the NASED development will require the construction of parking garages to accommodate parking for the new site functions as well as providing the required parking needed for events at the stadium. To achieve this, parking garages are envisioned to be arranged in a semi-circle pattern on the eastern/mauka side of the ring road. The structured parking ramps will have one level of parking below grade for secure residential parking, at-grade parking for retail, and elevated parking to replace the stadium parking lost during construction.

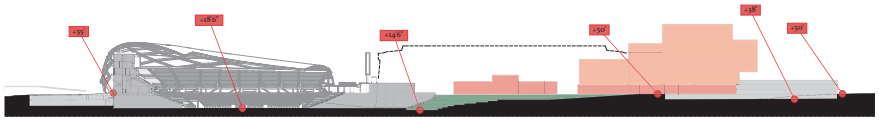
The site slopes down towards Hālawa Stream (which is the lowest part of the NASED site), so there will need to be minimal excavation on the southern portions of the site in the Upper and Lower Hālawa parking lots. Structured parking and the rest of the mixed-use development will need to be built 'up' rather than 'down' on the southern portions of the site to avoid the water table and proximity to Hālawa Stream.



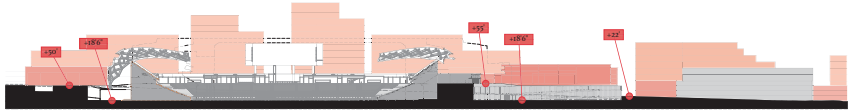
XXXX XSTG SPOT ELEVATION

XXXX NEW SPOT ELEVATION

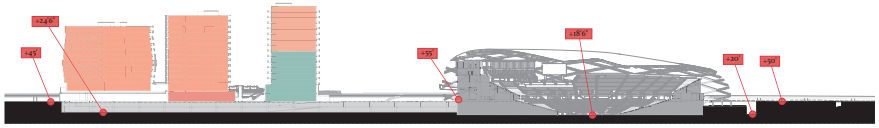
XXXX BUILDING AT-GRADE FLOOR ELEVATIONS



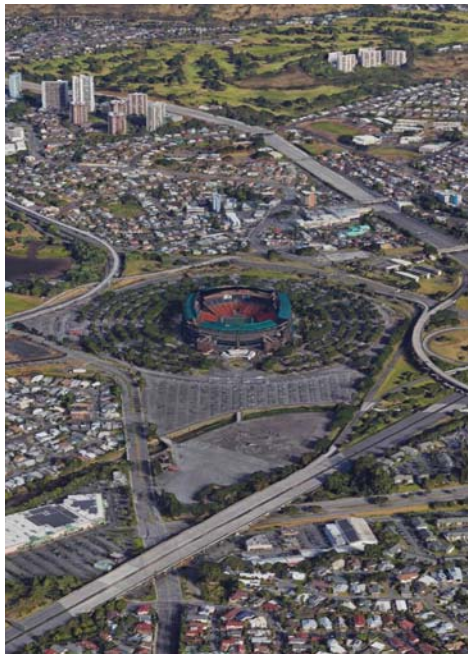
SECTION 1



SECTION 2



SECTION 3



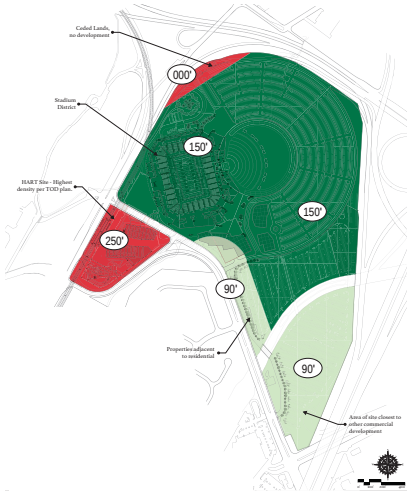
ZONING

The Hālawa TOD Plan outlined building height and density restrictions based on specified zoning districts. The intent of the TOD plan is that future developer teams would comply with the applicable district standards. If developers wished to seek additional height or density from those outlined in the TOD standards, per section 4.3.2 of the Hālawa TOD Plan the developers must apply for a TOD Special District Permit or a Planned Development Transit Permit. To achieve height or density bonuses, the landowner must provide community benefits, such as affordable housing, open space/parks, right-of-way improvements to existing community amenities, or enhancements of pedestrian and multimodal transportation. The Hālawa TOD also indicates that future development of over 200 feet requires notification of the Federal Aviation Administration (FAA), and a close comparison between actual on-site building heights and the established elevation of the appropriate airport will be required.

The NASED PMP is intended to compliment and build upon the principles of the Hālawa TOD Plan. Building heights and massing become less intense the further one gets from the Aloha Stadium HART Station. The largest and tallest buildings are located closer to Salt Lake Boulevard, and step down in density the closer they get to the residential areas adjacent to the development.

District Maximum Allowable Heights

The NASED PMP slightly alters the Figure 4-3: Building Maximum with Community Benefits TOD Plan diagram indicating the allowable heights. The 'maximum' heights the TOD refers to is after height or density bonuses have been granted due to the development providing community benefits. The NASED PMP Option B Height Limitations diagram indicates the estimated appropriate building heights per the latest master planning efforts. The latest efforts include market research to create an estimated amount of program that could be included with a full build-out of NASED. The amount of program identified as economically feasible by the NASED team would require additional density compared to what was included in the Hālawa TOD, however the NASED team has altered and improved the density of the development in relation to key neighbors. The NASED PMP substantially reduces the allowable height on the mauka side of Salt Lake Boulevard across the street from the residential neighborhoods. Previously, the Hālawa TOD allowed 150' of maximum building height, but the NASED team is proposing a reduction to 90' for the area closest to the single-family houses. To help reduce the height and density of the development with immediate adjacency to housing, the NASED PMP proposes a higher allowable height than the TOD plan along the eastern/mauka side of the existing Stadium. The case for increased height to the east of the existing stadium is the presence of the highway interchange to the east. Higher buildings and density would provide a 'shield' and assist with the overall sense of place within the NASED by providing a buffer for the development from traffic noise and activity.



ARCHITECTURAL GUIDELINES

Building Type Standards

The programmatic masterplan of the 'New Aloha Stadium Entertainment District' is made up of an initial first phase and subsequent future phases which should all work together to contribute to the success of this project. Within each of these phases are many building types. The purpose of these architectural guidelines is to point out the various building types, features, character, and massing. These standards intend to describe a minimum level of quality while assisting other standards mentioned in this document. Per the NASED Program, the non-stadium building types fall into 5 categories: residential, retail, office, hotel and structured parking.

The predominant building types in this portion are found in the key below and are also color coded for reference. The requirements for each type are outlined in the consecutive pages.

Residential High Rise

- The garage entrance should be aligned with the central core and provide access to all building floors. It will we be a prominent feature in the garage that is visible and easily found,
- The primary entrance may stand out in relation to the surrounding context by using covered projections or covered recesses into the structure that provide an experience sheltered from the outside elements.
- The area located directly in front of the street level entrance should not be constrained by other site elements and should contain spaces for seating.

Fenestration

DESCRIPTION

The high rise residential building is a multi-family structure of the highest density. These towers, which are the tallest buildings on the site, are composed of various configurations of units that range from studios to one-bedroom units to multiple-bedroom apartments.

PREDOMINANT FEATURES

Entry

- There shall be minimum one entrance into the tower from ground level and minimum one entrance from inside the garage at the residential parking level.
- The entryway must be connected to a lobby that contains vertical circulation leading occupants to either their respective floor or to the main amenity deck where the central core can be accessed.
- The street level entrance must be the primary entry way and shall be clearly visible from public spaces.
- Fenestration will be provided by doors and windows.
- Glazing within the fenestration may change colors, tints, and transparency depending on the location.
- Glazing shall maximize light transmittance while remaining at a low emissivity. This will ensure ample light is received with minimal heat gain, maximizing the sustainability initiatives of the masterplan.
- Window/wall glazing will maximize views by reducing the mullion amounts and widths while also extending floor to ceiling at most instances.
- There must be operable windows provided in accordance with the number of sleeping rooms in each unit; minimum of one per unit.
- Window AC units projecting from the facade are prohibited.
- Locations with glazing that do not have a balcony above providing shade will be allowed to provide horizontal shade elements that do not exceed 4' extensions.

Lanai / Balcony

- Each unit will be provided with a minimum of one outdoor space.
- Balconies must be occupiable.
- Vegetated balconies with green roofs can be provided on building edges that give residents access to green spaces raised off ground level
- Railings shall be composed of transparent glazing, not steel post railings.
- Railings shall not be suspended via tension members that obstruct views.

Amenity Deck

- Amenity decks may be shared between multiple towers.
- The amenity deck cannot be accessible to the general public.
- Landscaping with areas for vegetation, trees, and grass lawns must be incorporated.
- Larger open gathering areas, as well as more private smaller spaces with seating shall be provided.

- Amenity deck features for residents shall include, but not be limited to: pools, cabanas, patio furniture, seating, fire pits, canopies, grills, playgrounds, community gardens, and pavilions
- Entrances to buildings from the amenity deck shall be prominent features.

- In buildings, at the amenity deck level, other recreational activities such as gym's, saunas, and theaters may be incorporated.
- Areas to serve food/beverages may be included in certain amenity decks.

Equipment

- If outdoor mechanical/electrical/communication equipment is needed, it must be screened from direct views. The screen system must also blend into the architectural character.
- If equipment is attached to the structure it shall blend into the building massing.

- PV equipment for sustainability initiatives shall be located on unoccupied roof decks.

Architectural Character

- High rises will utilize a double loaded corridor to maximize rentable SF and minimize the circulation SF
- These towers will use podium construction, otherwise known as pedestal or platform construction.
- Each tower will have their respective entrance at ground level and at garage level.
- Buildings shall express the construction method and materials in a way to reveal and not conceal the buildings tectonics.

Building Massing

- High-rise buildings will be eight stories or taller in height.
- Floor to floor heights at most floors shall be approximately 9'-6", amenity decks shall be approximately 15'-0", and penthouses shall be approximately 12'-0".
- The entrance at the ground floor will appear as a continuation of the vertical massing
- Units will include balconies and or vegetated patios.
- Facade articulations of projections and indentations will be used for balconies.

- The top of the massing may contain less indoor SF and more usable outdoor space.
- Massing in close proximity must communicate and use elements of the same design language.
- The mass shall closely tie into the concept of the respective phase it is located in through representing a distinctive form.
- The massing roofs shall be flat with areas for green roofs or PV panels.
- Residential towers should be located and oriented to take advantage of views to the mountains or the ocean to particular design elements (parks, corridors, green spaces, stadium, etc.) on site.
- Masses shall not block access to view corridors, cast excessive shade onto another mass, or create unfavorable wind conditions for site occupants.

Frontage

- Each building will contain an individualized entrance
- The street frontage will have a linear progression of spaces leading pedestrians from the street to either a sidewalk or open hardscape space that terminates at the covered entryway.
- The frontage may either be open to a public gathering plaza or down a smaller walkway depending on the location of the site the building is situated in.

Articulations / Details

- Articulations of the facade will create a rhythm through symmetry or asymmetry
- Balconies or projections shall help to break up the mass vertically and horizontally
- Continuous elements extending multiple floors will help to create a cohesive structure.
- Exposed floor slabs will create a repetitive element that gives human scale and breaks down the mass that will be altered through the way the overall massing is treated (tapering, bending, shifting, etc)
- The maximum window to wall ratio should be used to maximize expansive views at these towers. Slightly lower ratios shall be used if units are not equipped with AC.
- Details and ornamentation shall only be used if they are functional elements contributing to building performance, views, or aiding the definition of implicit boundaries.

Materials / Color

- Materials should reflect local vernacular and reveal their true nature.
- Materials should be durable and anti-corrosive.
- Buildings color shall reflect the respective phases scheme and be fully integrated into the design of the entire site.
- Colors/materials should not absorb heat, but reflect using a lighter palette.
- Vegetation and planters as a color/material shall be used as a common thread
- Distinctive colors: (concrete, glass, white paint, metal panels, wood)
- These can be dispersed throughout the high rise section.

Residential Mid Rise

DESCRIPTION

The mid rise residential building is intermediate in height between the low rise and high rise. Mid rise buildings are typically as tall as the street is wide. These structures are composed of various configurations of units that range from one room to a few rooms and are provided with vertical circulation in the form of elevator lifts.

PREDOMINANT FEATURES

Entry

- There shall be one entrance into the tower from ground level and one entrance from inside the garage at the residential parking level.
- The entryway must be connected to a lobby that contains vertical circulation leading occupants to either their respective floor or to the main amenity deck where the central core can be accessed.
- The street level entrance must be the primary entry way and shall be clearly visible.
- The garage entrance should be aligned with the central core and provide access to all building floors. It will we be a prominent feature in the garage that is visible and easily found,
- The primary entrance may stand out in relation to the surrounding context by using covered projections or covered recesses into the structure that provide an experience sheltered from the outside elements.
- The area located directly in front of the street level entrance should not be constrained by other site elements and should contain spaces for seating.

Fenestration

- Fenestration will be provided by doors and windows.
- Glazing within the fenestration may change colors, tints, and transparency depending on the location.
- Glazing shall maximize light transmitance while remaining at a low emissivity. This will ensure ample light is received with minimal heat gain, maximizing the sustainability initiatives of the masterplan.
- Window/wall glazing will maximize views by extending floor to ceiling at most instances, but will also take privacy into consideration at the lower levels with partial height walls at the exterior..
- There must be operable windows provided in at least one location in each unit.
- Window AC units projecting from the facade are prohibited.
- Locations with glazing that do not have a balcony above providing shade will be allowed to provide horizontal shade elements that do not exceed 4' extrusions.

Lanai / Balcony

- Each unit will be provided with a minimum of one outdoor space.
- Balconies must be occupiable
- Vegetated balconies and green roofs shall be thoughtfully situated within the exterior and should give residents access.
- Railings shall be composed of transparent glazing and not steel post railings where views are unobstructed. Railings in close proximity to other buildings shall be opaque.
- Railings shall not be suspended via tension members that obstruct views.

Amenity Deck

- Amenity decks can be provided in instances raised on a podium.
- This deck can not be accessible to the general public.
- Landscaping with areas for vegetation, trees, and grass lawns must be incorporated.
- Larger open gathering areas, as well as more private smaller spaces with seating shall be provided.
- Some features for residents will include pools, cabanas, patio furniture, seating, fire pits, canopies, grills, playgrounds, community gardens, and pavilions
- Entrances to buildings from the amenity deck shall be prominent features.
- In buildings, at the amenity deck level, other recreational activities such as gym's, saunas, and theaters may be incorporated.
- Areas to serve food/beverages may be included in certain amenity decks.

Equipment

- If outdoor mechanical/electrical/communication equipment is needed, it must be screened from direct views. The screen system must also blend into the architectural character.
- If equipment is attached to the structure it shall blend into the building massing.
- PV equipment for sustainability initiatives shall be located on unoccupied roof decks.

Architectural Character

- Mid rises will utilize a double loaded corridor to maximize rentable SF and minimize the circulation SF
- These buildings will use podium construction, otherwise known as pedestal or platform construction.
- Each building will have their respective entrance at ground level and at garage level.
- Buildings shall express the construction method and materials in a way to reveal and not conceal the buildings tectonics.
- All sides of the building shall reflect these characteristics.

Building Massing

- Buildings will be four stories to seven stories in height.
- Floor to floor heights at most floors shall be approximately 9'-6", amenity decks shall be approximately 15'-0", and penthouses shall be approximately 12'-0".
- Units will include balconies and or vegetated patios.
- Facade articulations of projections and indentations will be used for balconies.
- The top of the massing may contain less indoor SF and more usable outdoor space.
- Massing in close proximity must communicate and use elements of the same design language.
- The mass shall closely tie into the concept of the respective phase it is located in through representing a distinctive form.
- The massing roofs shall be flat with areas for green roofs or PV panels
- Masses shall not block access to view corridors.
- If parking is not provided under the building via podium, garage spaces must be directly accessed by a bridge or connecting pathway.

Frontage

- The frontage may either be open to a public gathering plaza or down a smaller walkway depending on the location of the site the building is situated in.
- If not on a podium, there may be an elevated deck for residents' circulation between units.
- While not directly under the building, retailers may be situated in front of the structure if at public places.

Articulations / Details

- Articulations of the facade will create a rhythm through symmetry or asymmetry
- Balconies or projections shall help to break up the mass vertically and horizontally
- These may be as wide as they are tall, so breaking up the proportions must be considered.

- Details will reflect the composition of the mass and not of the individualized modules.
- The window to wall ratio should be maximized, but also sensitive to privacy at lower levels or areas juxtaposed to towers.
- Ornamentation shall only be used if they are functional elements contributing to building performance, views, or aiding the definition of implicit boundaries.
- The articulations shall reveal how the parts fit into the whole by emphasizing each part separately.

Materials / Color

- Materials should reflect local vernacular and reveal their true nature.
- Materials should be durable and anti-corrosive.
- Buildings color shall reflect the respective phases scheme.
- Colors/materials should not absorb heat, but reflect using a lighter palette.
- Vegetation and planters as a color/material shall be used as a common thread
- Distinctive colors: (concrete, glass, white paint, metal panels, wood).

Residential Low Rise

DESCRIPTION

The low rise residential building is categorized as the lowest in height and may not include elevators. Low rise buildings typically have ground level frontage and may include increased privacy. These structures shall be composed of various configurations of units that range from one room to a few rooms that can be horizontally or vertically connected..

PREDOMINANT FEATURES

Entry

- If ground level units are utilized, a clearly visible front door shall be accessible from the sidewalk by a walkway.
- There shall be a shared primary main entrance to upper level units and secondary access within the building as well.
- Unit entrances can occur through internal corridors, vertical circulation, or ground level doors.
- Stoops, porches, and shaded areas may be used at shared and private entrances.
- The primary entrance should stand out in relation to the surrounding context by using covered projections or covered recesses into the structure that provide an experience sheltered from the outside elements.
- Transitions from the public to private realm through architectural and landscape cues shall be used for delineation.
- The entrance should be raised slightly above grade to increase privacy.
- The area located directly in front of the street level entrance should not contain high traffic circulation or gathering areas.
- If a common landing area where multiple unit entrances open on to is used, it should be designed to be visible from pedestrian routes and avoid more than 2 doors.

Fenestration

- Fenestration will be provided by doors and windows.
- Glazing within the fenestration may change colors, tints, and transparency depending on the location.
- Glazing shall maximize light transmittance while remaining at a low emissivity. This will ensure ample light is received with minimal heat gain, maximizing the sustainability initiatives of the masterplan.
- Window/wall glazing shall maximize views above the first floor and will take privacy into consideration at the lower levels.
- Fenestration shall be situated within the facade in a way that does not allow for direct views into units from other locations nearby..
- There must be operable windows provided in at least one location in each unit.
- Window AC units projecting from the facade are prohibited.
- Locations with glazing that do not have a balcony above providing shade will be allowed to provide horizontal shade elements that do not exceed 4' extrusions.

Lanai / Balcony

- Each unit shall be provided with a minimum of one outdoor space if possible.
- Balconies must be occupiable.
- Vegetated balconies and green roofs shall be thoughtfully situated within the exterior and should give residents access.

- Railings shall be composed of transparent glazing where views are unobstructed.
- Railings in close proximity to other buildings shall be opaque.

Amenity Areas

- A minimum of one shared indoor or outdoor amenity area shall be included as part of the low rise building.
- If located at grade it may open to streets or walkways to provide access.
- This area must be framed appropriately within the massing.
- This area shall be able to connect with other open spaces when possible.
- This should provide spaces for activity, seating, shade structures, children's play equipment, and barbecues.
- This area shall have landscaping to offer privacy, screening, and act as an interface with the public realm.

Equipment

- If outdoor mechanical/electrical/communication equipment is needed, it must be screened from direct views. The screen system must also blend into the architectural character.
- If equipment is attached to the structure it shall blend into the building massing.
- PV equipment for sustainability initiatives shall be located on unoccupied roof decks.
- Equipment shall not be located in close proximity to entrances.

Architectural Character

- Low rises may consist of townhomes, stacked townhomes, back to back townhomes, and apartment buildings.
- After analyzing the surrounding context, the low rise building type selected should fit into the overall environment.
- Garage access may be front or rear if not separated from the structure.
- Each building will have their respective entrance at ground level.
- Buildings shall express the construction method and materials in a way to reveal and not conceal the buildings tectonics.
- There should be distinct front and rear conditions.
- Side and back wall shall be shared with units vertically and or horizontally.
- All sides of the building shall reflect these characteristics.

Building Massing

- Buildings will be one to four stories in height.
- Floor to floor heights at most floors shall be approximately 9'-6".
- Units will include balconies and or vegetated patios.
- Facade articulations of projections and indentations will be used for balconies.
- Shared vertical circulation may serve as the anchor.
- Buildings should provide appropriate transitions in scale to nearby buildings and open spaces.
- Generous setbacks shall be used to provide privacy for ground level units.

- Massing should help to create different front and rear yard areas.
- The top of the massing may contain less indoor SF and more usable outdoor space.
- Massing in close proximity must communicate and use elements of the same design language.
- Buildings shall align with neighboring patterns.
- The mass shall closely tie into the concept of the respective phase it is located in through representing a distinctive form.
- The massing roofs shall be flat with areas for green roofs or PV panels
- Parking shall be integrated within the building or within a reasonable walking distance.
- Reduce conditions where buildings overlook each other to ensure sunlight and skylight views.

Frontage

- The frontage may either be open to a public gathering plaza or down a smaller walkway depending on the location of the site the building is situated in.
- Landscape transitions shall be used to soften the building edge.
- Raised platforms no greater than 5 steps or covered projections should be utilized.
- Relationship to grade change shall be maintained by stepping buildings or segments of buildings across the site.

Articulations / Details

- Articulations of the facade will create a rhythm through symmetry or asymmetry
- Balconies or projections shall help to break up the mass vertically and horizontally
- Details will proportionally help distinguish the individualized modules.
- The window to wall ratio should be maximized, but also sensitive to privacy at lower levels.
- Ornamentation shall only be used if they are functional elements contributing to building performance, views, or aiding the definition of implicit boundaries.
- The articulations shall reveal how the parts fit into the whole by emphasizing each part separately.
- Facades may provide details for each unit or appear as one continuous structure.
- Facade bays may be separated through recesses, reveals, material, rhythm, fenestration, fire break walls, roof top spaces, landings, and porches.
- Each facade face shall respond to the site conditions.
- Provide variations in architectural design between buildings for a varied but cohesive collection of structures.

Materials / Color

- Materials should reflect local vernacular and reveal their true nature.
- Materials should be durable and anti-corrosive.
- Buildings color shall reflect the respective phases scheme.
- Colors/materials should not absorb heat, but reflect using a lighter palette.
- Vegetation and planters as a color/material shall be used as a common thread
- Distinctive colors: (stone, concrete, glass, white paint, metal panels, wood).

Retail / Entertainment

DESCRIPTION

The retail / entertainment buildings will be either one or two story structures that provide a variety of programmatic functions ranging from restaurants and bars to boutiques and supermarkets. The distribution of spaces and the tenants that occupy these spaces will be located in a place to best serve the surrounding context. Big box retailers shall be located in highly trafficked areas, whereas smaller clothing shops may be located along pedestrian pathways.

PREDOMINANT FEATURES

Entry

- The entrance can use covered projections or recesses into the facade that provide an experience sheltered from the outside elements.
- Entries should consider architectural features with distinguishing features.
- If the entrance is at ground level, the area located directly in front of the storefront should not block visibility of the storefront or signage.
- Second level entrances should not protrude into the path of circulation

Fenestration

- The storefront adjacent to pedestrian traffic should use a minimum fenestration amount of 40%.
- Visual transparency should be maximized along the street facing facade.
- Storefronts should be individual expressions of the tenants identity that will help break up monotonous pathways
- Glazing within the fenestration may change colors, tints, and transparency depending on the retailer.
- Glazing shall maximize light transmittance while remaining at a low emissivity. This will ensure ample light is received with minimal heat gain, maximizing the sustainability initiatives of the masterplan.
- Considerations shall be given to the larger retailers to ensure they are remaining within the character of the surroundings.
- The storefront should enhance the pedestrian environment
- Door proportions should be vertical remaining taller than overall width.
- Slight extrusions should be avoided to deter animal nesting.

Patio

- Outdoor patio spaces for seating are encouraged to activate street frontages.
- Partial height walls and railings will provide transitions between public and private realms
- Vegetation within the exterior is encouraged.
- Patio spaces should compliment the buildings architectural style
- Railings that increase transparency should be used to avoid unwanted activity.

Equipment

- If outdoor mechanical/electrical/communication equipment is needed, it must be screened from direct views. The screen system must also blend into the architectural character.
- If equipment is attached to the structure it shall blend into the building massing.
- Loading docks, dumpsters, or other supporting spaces will be located in unnoticeable areas screened from direct viewing.

Architectural Character

- Retail spaces will utilize single and double level structures.
- Retailers are to activate multiple facade faces for the storefront if available.
- First floor canopy/shading element will be used for second floor walkways to minimize circulation square footage.
- Second level circulation shall be covered with a canopy for exterior conditions.
- There shall be vertical circulation in the form of elevators and escalators to access the second floor.
- All walkways shall be covered/sheltered to enhance the pedestrian walking experience.
- Buildings shall express the construction method and materials in a way to reveal and not conceal the buildings tectonics.
- All visible sides of the retail space shall be activated through displays, frontage, art, vegetation, or other possibilities.

Building Massing

- Buildings will be one or two levels in height.
- Floor to floor heights at the first level shall be 18'-0" and 15'-0" at the second level.
- Retail buildings will include outdoor walkways, patios, vegetation, planters, outdoor seating, and experiential landscape elements.
- Second level walkways shall be approximately 10'-0" in width to handle stadium event traffic.
- The corners of second level retail buildings should be used for vertical circulation and outdoor patio space.
- Massing in close proximity must communicate and use elements of the same design language.
- Design elements, such as canopies, shall change in form based on the location and phase of construction to create distinguishable regions within the masterplan.
- The mass shall closely tie into the concept of the respective phase it is located in through representing a distinctive form.
- The massing roofs shall be flat with areas for green roofs or PV panels.
- Bridges and connecting pathways can be utilized to lead pedestrians to ground floor plazas or second level spaces.

Frontage

- The frontage may either be open to a public gathering plaza or down a smaller walkway depending on the location of the site the building is situated in.
- Frontal approach sidewalk shall be no less than 10'-0" wide.
- Columns and structural members should be used to implicitly capture space.
- Street parking and other activity generating elements shall be provided in front of tenant spaces if possible.
- Storefront windows should be used frequently to enhance visibility and enliven walkways.
- Larger retailers can reduce their transparency requirements, but shall be required to include other architectural treatments on the remainder of the frontage.
- Frontage should be articulated in a way that varies materials, colors, windows, entrances, canopies, and patios.
- Protrusions and the reversal shall be coordinated to create a rhythm within the frontage.

Materials / Color

- Materials used in each retail building should create a palette that blends in with other surrounding structures.
- Materials should be durable and anti-corrosive.
- Buildings color shall reflect the respective phases scheme.
- Vegetation and planters as a color/material shall be used as a common thread
- Distinctive colors: (concrete, glass, white paint, stone, metal panels, wood).
- High quality durable materials shall be used.
- Awnings and canopies shall be resistant to fade/ weathering.

Articulations / Details

- Articulations of the facade will create a rhythm through symmetry or asymmetry.
- Building bays should be a minimum of 20'-0" in width.
- No walls shall be left blank or untreated.
- Reveals, recesses, and projections shall help to break up the mass vertically and horizontally
- Details will consider the composition of the mass while creating individualized modules.
- The window to wall ratio should be maximized for increased transparency.
- Ornamentation shall only be used if they are functional elements contributing to building performance, views, or aiding the definition of implicit boundaries.
- Building articulations shall not be removed in lieu of tenant modifications.

Office Low-Rise and Mid-Rise

DESCRIPTION

The office building is a single or multi-tenant structure consisting of a reconfigurable open floor plan. A variety of spaces and sizes can be rented to accommodate small office rooms for the community, or larger spaces needed for companies.

PREDOMINANT FEATURES

Entry

- There shall be one entrance into the tower from ground level which may occur from inside the garage.
- The entryway must be connected to a lobby that contains vertical circulation leading occupants to either their respective floor or to the lowest level of the building where the central core can be accessed.
- There shall be at least one entrance to the building from the exterior at the lowest level of the office.
- The primary entry way shall be clearly visible from public spaces.
- The entry, if not on ground level, must contain at least one elevator at ground level for entry.
- The primary entrance may stand out in relation to the surrounding context by using covered projections or covered recesses into the structure that provide an experience sheltered from the outside elements.
- Offices located above retail space are permitted to use the same vertical circulation.

Fenestration

- Fenestration will be provided by doors and windows.
- Glazing within the fenestration may change colors, tints, and transparency depending on the location as long as they do not compromise the architectural characteristic of the composition.
- Glazing shall maximize light transmittance while remaining at a low emissivity. This will ensure ample light is received with minimal heat gain, maximizing the sustainability initiatives of the masterplan.
- Window/wall glazing will extend floor to ceiling at most instances.
- Operable shades may be installed for increased privacy.
- Locations with glazing that do not have a balcony above providing shade will be allowed to provide horizontal shade elements that do not exceed 4' extrusions.

Canopy

- Canopy conditions may be created by extending floor slabs at the perimeter to create covered conditions below for shading.
- Trellis's and vegetated extrusions may be used for sustainability initiatives and to enhance working environments.
- Canopies may be used as outdoor walkways.
- Railings on canopies shall be composed of transparent glazing, not steel post railings.

Amenity Deck / Common Area

- Amenity decks or common areas shared by the office building tenants shall be located in at least one place per building either indoors or outdoors if permitted.
- This deck can not be accessible to the general public.
- Landscaping with areas for vegetation, trees, and grass lawns must be incorporated.
- One larger open gathering area should be accompanied by more private smaller spaces with seating provided.
- Entrances to buildings from the common areas shall be prominent features.
- Circulation at this level may be indoors or outdoors.

Equipment

- If outdoor mechanical/electrical/communication equipment is needed, it must be screened from direct views. The screen system must also blend into the architectural character.
- If equipment is attached to the structure it shall blend into the building massing.
- PV equipment for sustainability initiatives shall be located on unoccupied roof decks.

Architectural Character

- Office buildings will utilize an outdoor corridor if permitting to maximize rentable SF and minimize the interior circulation SF.
- Office buildings will be built atop parking garages and retail spaces, keeping ground level occupancy for other programmatic elements.
- Buildings shall express the construction method and materials in a way to reveal and not conceal the buildings tectonics.
- A professional appearance should be achieved through the exterior facade.
- Areas with vegetation both on and around the structure shall be well landscaped.

Building Massing

- Floor to floor heights at most floors shall be approximately 12'-0".
- Office levels may include exterior circulation or vegetated canopies.
- Facade articulations of projections and indentations will be used for the level below.
- The top of the massing may contain less indoor SF and more usable outdoor space.
- Massing in close proximity must communicate and use elements of the same design language.
- The mass shall closely tie into the concept of the respective phase it is located in through representing a distinctive form.
- The massing roofs shall be flat with areas for green roofs or PV panels
- Masses shall gradually taper as levels increase in height.
- Masses shall remain horizontally proportioned.
- The mass shall react to contextual elements if in close proximity to an area with lower/higher heights.

Frontage

- Each tenant may not have an individual exterior entrance if an internal corridor is utilized.
- Frontage may not occur on the ground level.
- The frontage shall appear as one continuous component with unified elements creating a professional aesthetic.
- The frontage may either be open to a public gathering plaza or down a smaller walkway depending on the location of the site the building is situated in.

Articulations / Details

- Articulations of the facade will create a rhythm through symmetry or asymmetry
- Balconies or horizontal projections shall help to break up the mass vertically and should use green roof systems if possible.
- Large massing gestures should be carried through the building and other surroundings buildings of similar type.
- Exposed floor slabs will create a repetitive element that gives human scale and breaks down the mass that will be altered through the way the overall massing is treated (tapering, bending, shifting, etc)
- The maximum window to wall ratio should be used.
- Details and ornamentation shall only be used if they are functional elements contributing to building performance, views, or aiding the definition of implicit boundaries.
- Visibility to the exterior shall be maintained without contextual barriers.

Materials / Color

- Materials should reveal their true nature.
- Materials should be durable and anti-corrosive.
- Buildings color shall reflect the respective phases scheme.
- Colors/materials should not absorb heat, but reflect using a lighter palette.
- Vegetation and planters as a color/material shall be used as a common thread
- Distinctive colors: (concrete, glass, white paint, metal panels, wood)
- Office building material may juxtapose materials of structure below (garage, retail, etc.)

Hotel

DESCRIPTION

The hotel building is a structure providing short term lodging and accommodations for guests. Hotels are composed of various configurations of rooms that range from studios to suites.

PREDOMINANT FEATURES

Entry

- There shall be a minimum of one entrance into the hotel from ground level and one entrance from inside the garage at the parking level.
- The primary entryway must be connected to a lobby that contains vertical circulation leading occupants to either their respective floor or to the main amenity deck where the central core can be accessed.
- The street level entrance must be the primary entry way and shall be clearly visible from public spaces.
- Primary entrance doors shall be located in an area facing green space, a plaza, or the street.
- The primary entrance may stand out in relation to the surrounding context by using covered projections or covered recesses into the structure that provide an experience sheltered from the outside elements.
- The garage entrance should be aligned with the central core and provide access to all building floors. It will be a prominent feature in the garage that is visible and easily found.
- The area located directly in front of the street level entrance should not be constrained by other site elements and should contain spaces for seating.

Fenestration

- Fenestration will be provided by doors,windows, storefront systems, and curtain wall systems.
- Glazing within the fenestration may change colors, tints, and transparency depending on the location.
- Glazing shall maximize light transmittance while remaining at a low emissivity. This will ensure ample light is received with minimal heat gain, maximizing the sustainability initiatives of the masterplan.
- Window/wall glazing will maximize views by reducing the mullion amounts and widths while also extending floor to ceiling at most instances.
- Window AC units projecting from the facade are prohibited as well as louvered window exhaust.
- Locations with glazing that do not have a balcony above providing shade will be allowed to provide horizontal shade elements that do not exceed 4' extrusions.

Lanai / Balcony

- Rooms may or may not be provided with an outdoor space.
- Balconies must be occupiable
- Vegetated balconies or green roofs can be provided on balcony spaces.
- Access to outdoor space should be maximized
- Railings shall be composed of transparent glazing, not steel post railings.
- Railings shall not be suspended via tension members that obstruct views.

Amenity Deck

- Amenity decks may be shared between multiple buildings of hotel or residential occupancy.
- A division with lockable entrances must be provided if an amenity deck is shared between hotel and residential occupancies.
- This deck can not be accessible to the general public.
- Landscaping with areas for vegetation, trees, and grass lawns must be incorporated.
- Larger open gathering areas, as well as more private smaller spaces with seating shall be provided.

- Some features will include pools, cabanas, patio furniture, seating, fire pits, canopies, grills, playgrounds, community gardens, playgrounds, and pavilions.
- Entrances to buildings from the amenity deck shall be prominent features.
- In buildings, at the amenity deck level, other recreational activities such as gym's, saunas, and theaters may be incorporated.
- Areas to serve food/beverages may be included in certain amenity decks.
- The amenity deck architecture must blend into the overall massing of the building

Equipment

- If outdoor mechanical/electrical/communication equipment is needed, it must be screened from direct views. The screen system must also blend into the architectural character.
- If equipment is attached to the structure it shall blend into the building massing.
- PV equipment for sustainability initiatives shall be located on unoccupied roof decks.

Architectural Character

- Hotels will utilize either a double loaded corridor or central core corridor to maximize rentable SF and minimize the circulation SF
- Corridors will not be on the exterior
- Hotels will use podium construction, otherwise known as pedestal or platform construction.
- Each hotel will have their respective entrance at ground level and at garage level.
- Buildings shall express the construction method and materials in a way to reveal and not conceal the buildings tectonics.
- The lobby may be on the ground level or amenity deck.
- Upper floors will be used for penthouses and have ample occupiable outdoor space.

Building Massing

- Floor to floor heights at most floors shall be approximately 9'-6", amenity decks shall be approximately 15'-0", and penthouses shall be approximately 12'-0".
- The entrance at the ground floor will appear as a continuation of the vertical massing
- Rooms may include balconies and or vegetated patios.
- Facade articulations of projections and indentations will be used for balconies.
- The top of the massing may contain less indoor SF and more usable outdoor space.
- Massing in close proximity must communicate and use elements of the same design language.
- If multiple buildings are built atop the same garage they shall communicate similar massing techniques.
- The mass shall closely tie into the concept of the respective phase it is located in through representing a distinctive form.
- The massing roofs shall be flat with areas for green roofs or PV panels
- Masses shall not block access to view corridors, cast excessive shade onto another mass, or create unfavorable wind conditions for site occupants.

Frontage

- Each building will contain an individualized entrance
- The street frontage will have a linear progression of spaces leading pedestrians from the street to either a sidewalk or open hardscape space that terminates at the covered entryway.
- Generous landscaping and trees should be placed along the hotel frontage at all sides of the structure.
- The frontage shall contrast hardscape areas of dense pedestrians with open green space.
- A usable outdoor greenscape area shall be located in close proximity to the hotel frontage.
- Ridesharing drop off/pick up areas shall be located within a visible and reasonable walking distance to the frontage.
- The frontage may either be open to a public gathering plaza or down a smaller walkway depending on the location of the site the building is situated in.

Articulations / Details

- Symmetrical or asymmetrical articulations of the facade will create a harmonious composition.

- Balconies or projections shall help to break up the mass vertically and horizontally.
- Fewer larger gestures should be used in lieu of multiple smaller gestures.
- Continuous elements extending multiple floors will help to create a cohesive structure.
- Exposed floor slabs will create a repetitive element that gives human scale and breaks down the mass that will be altered through the way the overall massing is treated (tapering, bending, shifting, etc)
- The maximum window to wall ratio should be used to maximize expansive views at these structures.
- Details and ornamentation shall only be used if they are functional elements contributing to building performance, views, or aiding the definition of implicit boundaries.
- Fenestration vs solid areas can help define unit modules.
- Shadow trim elements will help promote the appearance of horizontality.
- Every face should be articulated in a unique way that compliments the overall building composition.

Materials / Color

- Materials should reveal their true nature.
- Hotel specific colors that stray from the masterplan palette shall be used minimally as accents.
- Materials should be durable and anti-corrosive.
- Buildings color shall reflect the respective phases scheme.
- Colors/materials should not absorb heat, but reflect using a lighter palette.
- Vegetation and planters as a color/material shall be used as a common thread
- Distinctive colors: (concrete, glass, white paint, metal panels, wood)

Mixed Use

DESCRIPTION

The mixed use building is defined as having three primary components : a mid or high rise residential tower (adhering to the relevant set of design guidelines) sitting atop an appropriately-sized parking structure (adhering to the relevant set of design guidelines) and wrapped in a variety of secondary uses, such as retail storefronts, office / commercial space, or low / mid-rise residential live-work units. Pedestrian-scale storefronts and public spaces are placed at or near ground level with architectural setbacks on higher levels, allowing for increased public space and amenities via walkways, landscaped roof decks, and lanais.

PREDOMINANT FEATURES

- **Residential towers included in Mixed Use buildings shall comply with their respective design guidelines as specified.
- **Retail components included in Mixed Use buildings shall comply with their respective design guidelines as specified.

Entry

- Entrances can use covered projections or recesses into the facade that provide an experience sheltered from the outside elements.
- The area located directly in front of the retail storefront should not block visibility of the storefront or signage.
- Second level entrances should not protrude into the path of circulation
- There shall be one entrance into the residential tower from ground level and one entrance from inside the garage at the residential parking level
- Residential and live-work units located along public walkways and retail corridors shall have private entrances with a clear delineation between public and private spaces.
- Secondary entrances for live-work and retail components shall be located in the garage for ease of access to tenants and service needs.

Fenestration

- Fenestration will be provided by doors and windows.
- There must be operable windows provided in at least one location in each residential unit.
- Window AC units projecting from the facade are prohibited.
- Storefront glazing will maximize views in and out of retail spaces with limited obstructions
- Retail storefront should enhance the pedestrian environment

- Door proportions should be vertical remaining taller than overall width.
- Slight extrusions should be avoided to deter animal nesting.
- The storefront adjacent to pedestrian traffic should use a minimum fenestration amount of 40%.
- Visual transparency should be maximized along the street facing facade.
- Storefronts should be individual expressions of the tenants identity that will help break up monotonous pathways
- Glazing within the fenestration may change colors, tints, and transparency depending on the retailer.
- Glazing shall maximize light transmittance while remaining at a low emissivity. This will ensure ample light is received with minimal heat gain, maximizing the sustainability initiatives of the masterplan.
- Considerations shall be given to the larger retailers to ensure they are remaining within the character of the surroundings.

Lanai / Balcony / Patio

- Upper and ground level mixed use tenant spaces should be connected via public pedestrian walkways and vegetated corridors
- Each residential unit will be provided with a minimum of one private outdoor space
- Balconies must be occupiable
- Vegetated balconies with green roofs can be provided on building edges that give residents access to green spaces raised off ground level
- Railings shall be composed of transparent glazing, not steel post railings.
- Lanais shall not be suspended via tension members that obstruct views.
- Residential live-work units located along public walkways and retail corridors shall have private outdoor space separated from the public right of way.
- Outdoor patio spaces for seating are encouraged to activate street frontages and elevated walkways
- Vegetation within the exterior, along walkways and around entrances is encouraged.
- Patio spaces should complement the buildings architectural style

Private Amenity Deck

- Amenity decks may be shared between multiple buildings of hotel or residential occupancy.
- A division with lockable entrances must be provided if an amenity deck is shared between hotel and residential occupancies.
- This deck cannot be accessible to the general public.
- Landscaping with areas for vegetation, trees, and grass lawns must be incorporated.

- Larger open gathering areas, as well as more private smaller spaces with seating shall be provided.
- Some features will include pools, cabanas, patio furniture, seating, fire pits, canopies, grills, playgrounds, community gardens, playgrounds, and pavilions.
- Entrances to buildings from the amenity deck shall be prominent features.
- In buildings, at the amenity deck level, other recreational activities such as gym's, saunas, and theaters may be incorporated.
- Areas to serve food/beverages may be included in certain amenity decks.
- The amenity deck architecture must blend into the overall massing of the building

Equipment

- If outdoor mechanical/electrical/communication equipment is needed, it must be screened from direct views. The screen system must also blend into the architectural character.

- If equipment is attached to the structure it shall blend into the building massing.
- PV equipment for sustainability initiatives shall be located on unoccupied roof decks.
- Loading docks, dumpsters, or other supporting spaces will be located in unnoticeable areas screened from direct viewing.

Architectural Character

- High rises will utilize a double loaded corridor to maximize rentable SF and minimize the circulation SF
- These towers will use podium construction, otherwise known as pedestal or platform construction.
- Each tower will have their respective entrance at ground level and at garage level.
- Buildings shall express the construction method and materials in a way to reveal and not conceal the buildings tectonics.
- Retail spaces will utilize single and double level structures.
- Retailers are to activate multiple facade faces for the storefront if available.
- First floor canopy/shading element will be used for second floor walkways to minimize circulation square footage.
- Second level circulation shall be covered with a canopy for exterior conditions.
- There shall be ADA compliant vertical circulation in the form of elevators and escalators to access the second floor.
- All walkways shall be covered/sheltered to enhance the pedestrian walking experience.
- All visible sides of the retail space shall be activated through displays, frontage, art, vegetation, or other possibilities.
- Partial height walls and railings will provide transitions between public and private realms
- Overhead canopies should be used to provide comfortable shading from sun and weather while tying larger open-air spaces into a continuous pedestrian experience.

Building Massing

- Residential units will include balconies and or vegetated patios.
- Massing in close proximity must communicate and use elements of the same design language.
- The massing roofs shall be flat with areas for green roofs or PV panels
- Masses shall not block access to view corridors, cast excessive shade onto another mass, or create unfavorable wind conditions for site occupants.
- Mixed use buildings will consist of one or two levels of residential live-work units atop one or two levels of retail.
- Floor to floor heights at the first level shall be 18'-0" when attached to a parking structure and 20'-0" when unattached. Floor to floor height will be 15'-0" at the second level.
- Retail buildings will include outdoor walkways, patios, vegetation, planters, outdoor seating, and experiential landscape elements.
- Second level walkways shall be approximately 10'-0" in width to handle stadium event traffic.
- The corners of second level retail buildings should be used for vertical circulation and outdoor patio space.
- Design elements, such as canopies, shall change in form based on the location and phase of construction to create distinguishable regions within the masterplan.
- The mass shall closely tie into the concept of the respective phase it is located in through representing a distinctive form.
- Bridges and connecting pathways can be utilized to lead pedestrians to ground floor plazas or second level spaces.

Frontage

- The street frontage will have a linear progression of spaces leading pedestrians from the street to either a sidewalk or open hardscape space at a covered entryway.
- The frontage may either be open to a public gathering plaza or down a smaller walkway depending on the location of the site the building is situated in and the nature of the entry.
- Frontal approach sidewalk shall be no less than 10'-0" wide.
- Columns and structural members should be used to implicitly capture space.
- Street parking and other activity generating elements shall be provided in front of tenant spaces if possible.
- Storefront windows should be used frequently to enhance visibility and enliven walkways.
- Larger retailers can reduce their transparency requirements but shall be required to include other architectural treatments on the remainder of the frontage.
- Frontage should be articulated in a way that varies materials, colors, windows, entrances, canopies, and patios.
- Protrusions and the reversal shall be coordinated to create a rhythm within the frontage.

Articulations / Details

- Articulations of the facade will create a rhythm through symmetry or asymmetry
- Balconies or projections shall help to break up the mass vertically and horizontally
- Continuous elements extending vertically or horizontally will help to create a cohesive structure.
- Exposed floor slabs will create a repetitive element that gives human scale and breaks down the mass that will be altered through the way the overall massing is treated (tapering, bending, shifting, etc)
- The maximum window to wall ratio should be used to maximize expansive views in towers. Slightly lower ratios and shading strategies shall be used if units are not equipped with AC.
- Details and ornamentation shall only be used if they are functional elements contributing to building performance, views, or aiding the definition of implicit boundaries.
- Building bays should be a minimum of 20'-0" in width.
- No walls shall be left blank or untreated.
- Reveals, recesses, and projections shall help to break up the mass vertically and horizontally
- Details will consider the composition of the mass while creating individualized modules.
- Building articulations shall not be removed in lieu of tenant modifications.

Materials / Color

- Materials used in each building should create a palette that blends in with other surrounding structures.
- Materials should be durable and anti-corrosive.
- Buildings color shall reflect the respective phases scheme.
- Vegetation and planters as a color/material shall be used as a common thread, unifying neighboring buildings to each other as well as to the landscape
- Distinctive colors: (concrete, glass, white paint, stone, metal panels, wood).
- High quality durable materials shall be used.
- Awnings and canopies shall be resistant to fade/ weathering.

PARKING GARAGE

DESCRIPTION

Above-ground parking garage structures will be used to provide adequate parking for the site's programmatic needs. Parking needs and volume will vary depending on the structure's location, adjacent buildings' needs and schedules, and seasonal event peak uses.

PREDOMINANT FEATURES

Entry

- Parking structures shall have a minimum of two entry / exit points to maximize ease of access
- Entries will be clearly delineated in the façade treatment

- Pedestrian entrances and walkways to and from parking stalls will be clearly marked to minimize pedestrian / vehicular hazards
- Parking attendant or automatic gate will be included at entry to manage parking capacity

Fenestration

- Fenestration will be provided by doors and windows if applicable
- Most of the building façade will remain open-air and naturally ventilated with some form of architectural screening

Private Amenity Deck

- Garages serving residential or hotel buildings shall include amenity decks which may be shared between multiple buildings of hotel or residential use.
- A division with lockable entrances must be provided if an amenity deck is shared between hotel and residential occupancies.
- This deck cannot be accessible to the general public.
- Landscaping with areas for vegetation, trees, and grass lawns must be incorporated.
- Larger open gathering areas, as well as more private smaller spaces with seating shall be provided.
- Some features will include pools, cabanas, patio furniture, seating, fire pits, canopies, grills, playgrounds, community gardens, playgrounds, and pavilions.
- Areas to serve food/beverages may be included in certain amenity decks.
- The amenity deck architecture must blend into the overall massing of the building

Equipment

- If outdoor mechanical/electrical/communication equipment is needed, it must be screened from direct views. The screen system must also blend into the architectural character.
- If equipment is attached to the structure it shall blend into the building massing.
- PV equipment for sustainability initiatives shall be located on unoccupied roof decks.

Architectural Character

- Buildings shall express the construction method and materials in a way to reveal and not conceal the buildings tectonics.
- Overall dimensions and structural grid spacing will be determined by parking needs and modules
- Except for necessary vehicular access ramps, floors will remain level whenever possible to allow for potential future retrofits

Building Massing

- Floor to floor heights will be 18'-0" on ground level and 9'-0" for each proceeding parking level.
- Garage heights should be limited to five levels to limit disruption to the pedestrian scale.
- Visual screening using pervious architectural facades and hanging vegetation is encouraged to breakdown the overall structure mass.

Frontage

- A double height ground level increases transparency for pedestrian safety and encourages shared uses
- Columns and structural members should be used to implicitly capture space.

Articulations / Details

- Continuous façade elements extending vertically or horizontally will help to create a cohesive structure.
- Exposed floor slabs will create a repetitive element that gives human scale and breaks down the mass that will be altered through the way the overall massing is treated (tapering, bending, shifting, etc)
- Details and ornamentation shall only be used if they are functional elements contributing to building performance, views, or aiding the definition of implicit boundaries.

Materials / Color

- Materials used in each building should create a palette that blends in with other surrounding structures.
- Materials should be durable and anti-corrosive.
- Buildings color shall reflect the respective phases scheme.
- Vegetation and planters as a color/material shall be used as a common thread, unifying neighboring buildings to each other as well as to the landscape
- Distinctive colors: (concrete, glass, white paint, stone, metal panels, wood).
- High quality durable materials shall be used.

SITE GUIDELINES

The site of the 'New Aloha Stadium Entertainment District' builds upon the existing stadium lot which is naturally sloped down toward the stream and has a rich history through military and Hawaiian presence. The three main phases composing this site all work together, contributing to the success of this project. Within each of these three phases are a variety of different site conditions that have been closely studied in order to create the site plan, such as the geology, hydrology, topography, vegetation, and climate factors. The purpose of this component is to point out the arrangement of pedestrian circulation and open spaces, which coordinate with the surrounding structures and are influenced by the lighting and signage.

These guidelines intend to describe a minimum level of quality while assisting other guidelines mentioned in this document. They will also help in aiding the organizational stage of the convergence between landscape and architecture.

Pedestrian and Bike Pathways

DESCRIPTION

Pedestrian pathways should consider a wide range of physical activities that extend over a range of contextual characteristics. These pathways shall accommodate the needs and abilities of all pedestrians. The intent of this pedestrian circulation system is to increase accessibility of the site that creates an experiential system, linking all districts of the development for better access and movement. The pathways created on this site are also intended to connect into the network of pedestrian movement outside the site, providing opportunities to connect with the surrounding communities

Principles of Pedestrian Design

- Maximize user experience through the use of public art, street furnishings, vegetation, and interactive elements.
- Place public safety is a top priority
- Integrate bicycles and pedestrians into an interconnected multi-user network
- The pedestrian network should provide a continuous direct route to connect places people want to go.
- The pedestrian paths should become a multi-purpose user friendly environment where activities are encouraged that don't interfere with path functionality.
- Provide well designed beaches and bicycle racks creating pauses at various intervals
- Contain landscaped areas and vegetated barriers
- Provide shading via awnings, trellis structures, and tree canopies

General

- Provide a direct connection to the new aloha stadium and rail station
- Create paths adjacent to the Hālawa stream
- Create safe connections to surrounding context
- Enhance pedestrian crossings at or over intersections
- Consider access to the Pearl Harbor historic trail
- Create safe conditions where bicycles and pedestrians share the same paths.
- Elevate crossings over busy roadways

Sidewalks

- This should be easily accessible to all users
- The path shall have an adequate travel width to accommodate the users this is designated for
- Allow outdoor seating to encroach if adequate width is provided
- Sidewalk corridors shall be safe without threatening conditions present
- These should be continuous pathways
- Landscaping and planting will contribute to visual and psychological comfort
- Widened interactive spaces should be provided along the corridor that allow for standing and sitting.
- These pathways should contribute to the character of the phase or district.
- Zones of furnishing/landscaping zone, pedestrian through zone, and frontage zone will depict activities that occur in such locations along the path
- Serve both transportation and recreation

Bike Lane

- If street parking is provided, the bike lane shall be between the traffic lanes and the parking stalls.
- If street parking is not provided, the bike lane shall be on the outer edge of the road.
- Is street parking is provided on one side of the road, the bike path shall be on the opposing side
- Pathways serving both pedestrians and bicycles should be significantly widened (10 foot wide minimum) for comfortable passing
- Striping or delineation should be highly visible
- Bike lanes shall be 4'-6' wide if sharing roadway with vehicles.
- Bike lanes off of roadways should use a minimum width of 8'
- Bicycle signal heads should be considered at intersections
- Staging areas at path entrances should be included in the design with basic site information
- Colored bicycle lanes should be considered especially at intersections
- Bike racks shall be provided at major entrances and exits to pathways
- Site entrances and exit points in areas that are clearly visible

Crosswalks

- Clarity and visibility on where to cross shall be easily understood by pedestrians and vehicles
- Crosswalks shall be provided at appropriate intervals
- An adequate crossing time accommodating all users will make for a positive pedestrian experience
- Refuge islands (6 feet wide minimum) should be provided to allow segments of roadway to be crossed
- Slow points and traffic calming devices should be used near crossings
- Pedestrian crossing signals for both foot traffic and bike traffic should be considered
- Special paving shall be used at heavily trafficked intersections

Materials / Color

- Materials should be durable and anti-corrosive.
- The color shall reflect the respective phases scheme.
- Vegetation and planters as a color/ material should be used.
- Sidewalks must be firm, stable, and slip resistant
- Colored , patterned, or stamped ground conditions will add distinctive visual appeal
- Thermoplastic markings should be used at crosswalks for increased durability
- High quality street furniture shall be used
- Durable asphalt or concrete shall be used

Pedestrian Bridges

DESCRIPTION

Pedestrian bridges are used throughout the site to provide critical links in the bicycle/pedestrian system to join areas separated by a variety of barriers. These bridges assist in site maneuverability without inhibiting traffic flow below and also traverse the stream on site. This makes for more accessible spaces and increases the usability of the site. Pedestrian bridges will enhance the overall circulation of pedestrians and vehicles on this site creating shorter more pleasurable pedestrian paths and removing the need for crosswalks at specific intersections.

PREDOMINANT FEATURES

Entry and Exit

- Bridges will serve as a gateway into the surrounding community or neighborhood
- Entrance points on to the bridge shall be easily located and at multiple points.
- Entrances at ground level shall be located near drop off zones, highly trafficked areas, or plaza spaces.
- Entrances shall be made accessible for all users
- Ramps shall be optimized for wheelchairs and bicycles
- The landings at entrances shall be wide enough to accommodate all user types
- Ground materials at interaction should react through materiality
- Landscaping should be used to guide pedestrians on or off the bridge and lead them with directionality.
- Any obstructions such as seating or structural members should be avoided near these landing zones
- Landings should spatially expand and not contract at connection points
- Entrance areas may use covered conditions at transitions
- Entrances shall seamlessly blend into the landscape/hardscape.
- Entry and exit widths will be based on the type, volume, and dominant direction of traffic flow.

Railings

- Railings shall enhance visual transparency and not create conditions out of the public line of sight.
- Each bridge may be treated individually, representing the phase or district
- Railings shall blend into the railings of other buildings at points of connection.
- Appropriate railing designs include (wire, cable mesh, glass, wood, balusters, structural, decorative, metal panels).
- Railing should not impede views of vistas, ecological features, or important structures.

Architectural Character

- There shall be one continuous pathway that circulates pedestrians, which may have smaller secondary pathways stemming from the central path.
- The walkway can contain a covered condition that shelters pedestrians from the elements.
- This pathway may undulate in form as it meanders around the multiple points of connection.
- The overall form should respond to the traffic pattern underneath.
- The construction method must minimize or eliminate any support columns.
- The path shall be accessible from various locations.
- This bridge shall express the construction method and materials in a way to reveal and not conceal the tectonics.
- There shall be geometric considerations in relation to the context
- Widened areas that create stopping points will be used at appropriate intervals

Bridge Massing

- Clearance shall maintain a minimum of 14'-0"
- If overcrossing has scenic vistas, additional width should be provided for stopping.
- Areas along the path may widen and narrow but should maintain a minimum width of 10'-0" at any point.
- The ground level entrance will appear as a continuation of the bridges massing language
- Massing in close proximity must communicate and use elements of the same design language.
- Multiple entrances to the same structure shall communicate similar massing techniques.
- The mass shall closely tie into the concept of the respective phase it is located in through representing a distinctive form.
- This mass shall not block access to view corridors, cast excessive shade onto another mass or plaza underneath, or create unfavorable wind conditions for site occupants.
- Should consider the traffic network underneath for proper justification
- Ramps and stairs or escalators should be provided.

Materials / Color

- Accent colors and materials shall be used minimally
- Materials should reveal their true nature.
- Materials should be durable and anti-corrosive and lightweight.
- The color shall reflect the respective phases scheme.
- Every face shall be articulated with proper colors and materials.
- Vegetation and planters as a color/material should be used.
- Distinctive colors: (concrete, glass, white paint, metal panels, wood)
- Surface should be anti-slip and can use open grating decks, concrete, wood, synthetic materials, or glass.

Articulations / Details

- Articulations will create a harmonious composition.
- Fewer larger gestures should be used in lieu of multiple smaller gestures.
- Continuous elements extending the length of the bridge will help to create a cohesive structure.
- A slender profile will ensure not to obstruct view corridors on the site.
- Exposed structural members will create add repetition and human scale
- Details and ornamentation shall only be used if they are functional elements, contributing to views, or aiding the definition of implicit boundaries.
- The relationship between solid vs void will remain as permeable as possible to maintain an open environment.
- Trim elements will help contain edge conditions and terminate details
- Every face should be articulated.
- Bridges shall have adequate drainage systems.

Public Plazas

DESCRIPTION

As one of the primary outdoor gathering spaces for the site, the public plazas will be critical elements for enhancing the overall pedestrian experience. The public plazas serve as wayfinding nodes that overlay pedestrian circulation and communal spaces with natural and architectural elements while connecting adjacent retailers, garages, residential towers, hotels, and other buildings with nearby open spaces and the larger master plan as a whole. Each plaza shall be a mixture of transient and static space composed of architectural and ecological form.

PREDOMINANT FEATURES

Entry

- Be visible and easily accessible with frontage on streets
- Provide user comfort, safety, and accessibility
- Entrance points into the plaza shall be seamlessly integrated into the surrounding buildings, roadways, and pedestrian spaces
- Plaza spaces shall serve as unifying nodes within the greater master plan
- Plaza spaces should serve as both place and threshold
- Linkages should be created to achieve a coherent network

Railings and Barriers

- Plaza edges and boundaries shall be clearly defined through material palette change or the addition of a barrier, such as a railing, seating element, or planting.
- Railings shall enhance visual transparency and not create conditions out of the public line of sight.
- Railings will all be treated similarly.
- Railings shall blend into the railings of other buildings at points of connection.
- Spatial barriers may not obscure visibility or line of sight among pedestrians, vehicles, cyclists, or retail storefronts.
- Elevated barriers and occupiable zones shall feature natural slope or otherwise accessible accommodations included within the design language.

Plantings and Natural Elements

- Preserve existing trees and natural topography
- Natural elements shall be included in each public space.
- Examples could include community gardens, water features, large decorative planters, or other landscaped elements.
- Native plants are heavily encouraged for the majority of landscaping.
- Site stormwater management elements, such as retention planters, bioswales, or community garden rainwater collection, are encouraged and should be incorporated into the overall design.
- Trees or vegetation that provides shade from direct sunlight should be used in at least one space per plaza.

Seating

- Well designed comfortable seating shall be provided.
- Dimensions, location and configuration shall maximize convenience and social interaction.
- Seating variety should include: movable seating, fixed benches, seat walls, fixed individual seating, planter ledges, seating steps.
- Ample public seating shall be provided, especially near significant nodes and intersections.
- A mixture of seating types should be included.
- Deterrents to seating such as rails and spikes are prohibited.

Architectural Character

- Each plaza shall contain at minimum one covered condition that protects pedestrians from the outdoor elements.
- The overall form should respond to the pedestrian traffic and movement patterns to maximize efficiency of space for the surrounding program.
- The construction method of all canopies, furniture elements, or infrastructure must minimize or eliminate any support columns.
- Each plaza and its components shall express the construction method and materials in a way to reveal and not conceal the tectonics.

Plaza Spatial Components

- Large open spaces shall be balanced with smaller defined areas to facilitate movement boundaries.
- Edges and a sense of enclosure should be defined by canopies, trees, and trellises.
- Plazas should be composed with a hierarchy of circulation pathways, social nodes, and design elements.
- Ample open space should be included to allow for flexible spatial arrangement and event scheduling, such as the Swap Meet or a similar artisan market.
- Areas along the paths may widen and narrow but should maintain a minimum width of 10'-0" at any point.
- Multiple entrances shall be provided from opposite and adjacent areas..
- The plaza shall closely tie into the concept of the respective phase it is located in through representing a distinctive design
- Any built infrastructure included should work with the spatial geometry and not appear forced.
- Connections from the plaza to surrounding public spaces or buildings should appear seamless without visual edge breaks.
- Landscaping should be used to define soft boundaries, such as seating areas, and provide pedestrian flow directionality.
- Landscaping should be used to guide pedestrians with directionality.
- Any obstructions such as seating or structural members should be avoided near prominent pathways.
- Co-locate with other public amenities such as buildings, shops, and restaurants.

Articulations / Details

- Symmetrical or asymmetrical articulations will create a harmonious composition.
- Planters or landscaped areas along the main circulation shall help to add variations to pathways.
- Fewer larger gestures should be used in lieu of multiple smaller gestures.
- Continuous elements across multiple plazas will help to create independent, but cohesive, design identities.
- Exposed structural members will create a repetitive element that gives human scale and creates boundaries.
- Details and ornamentation shall only be used if they are functional elements, contributing to views, or aiding the definition of implicit boundaries.
- The relationship between solid vs void will remain as permeable as possible to maintain an open environment.
- Any architectural element shall not block access to view corridors, cast excessive shade onto another space underneath, or create unfavorable wind conditions for site occupants.
- Trim elements will help contain edge conditions and terminate details
- Every edge should be articulated.
- Trash receptacles and bike racks shall be provided

Prohibitions

- Adjacent to garage entrances
- Loading docks
- Trash storage facility
- Exhaust vents
- Mechanical equipment
- Large opaque walls that impede visibility
- Barriers and fences

Materials / Color

- Accent colors and materials shall be used minimally
- Materials should reveal their true nature.
- Materials should be durable and anti-corrosive.
- The color shall reflect the respective phases scheme.
- Every face shall be articulated with proper colors and materials.
- Vegetation and planters as a color/ material should be used abundantly.
- Distinctive colors: (concrete, glass, white paint, metal panels, wood)
- Non slip pavers and drainage should be used and considered.

Public Parks

DESCRIPTION

As one of the primary outdoor gathering spaces for the site, the public parks will be critical elements for enhancing the overall pedestrian experience. The public parks serve as green space nodes that include pedestrian circulation and communal spaces within natural, or naturalized, spaces. Architectural elements, such as raised boardwalks or landscaped paths, may be included to enhance pedestrian accessibility and limit user impact while connecting nearby open spaces to the larger master plan as a whole. Each park shall be a mixture of occupiable and ornamental green space framed by architectural and ecological forms.

Railings and Barriers

- Park edges and boundaries may be more or less defined than other spaces
- Edges may be defined through material palette change or the addition of a barrier, such as a railing, seating element, or planting.
- Railings and barriers shall enhance visual transparency and not create conditions out of the public line of sight.
- Railings will all be treated similarly.
- Railings shall blend into the railings of other buildings at points of connection.
- Spatial barriers may not obscure visibility or line of sight among pedestrians, vehicles, cyclists, or retail storefronts.
- Elevated barriers and occupiable zones shall feature natural slope or otherwise accessible accommodations included within the design language.

PREDOMINANT FEATURES

Entry

- Entrance points into the park shall be seamlessly integrated into the surrounding buildings, roadways, and pedestrian spaces
- Park spaces shall serve as unifying nodes within the greater master plan
- Park spaces should serve as both place and threshold
- Be visible and easily accessible with frontage on streets
- Provide user comfort, safety, and accessibility
- Access from multiple points shall be provided

Plantings and Natural Elements

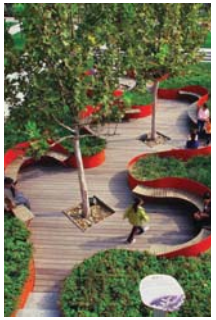
- Natural elements shall be included in each public space.
- Examples could include community gardens, water features, large decorative planters, or other landscaped elements.
- Native plants are heavily encouraged for the majority of landscaping.
- Site stormwater management elements, such as retention planters, bioswales, or community garden rainwater collection, are encouraged and should be incorporated into the overall design.
- Preserve existing trees and natural topography as much as possible

Seating

- Well designed comfortable seating shall be provided.
- Dimensions, location and configuration shall maximize convenience and social interaction.
- Shading should be provided above seating wherever allowable.
- Seating variety should include: movable seating, fixed benches, seat walls, fixed individual seating, planter ledges, seating steps.
- Ample public seating shall be provided, especially near significant nodes and intersections.
- A mixture of seating types should be included.
- Deterrents to seating such as rails and spikes are prohibited.

Architectural Character

- Each park may contain a covered condition that protects pedestrians from the outdoor elements.
- Parks may incorporate elevated boardwalks or other architectural pathways to limit user impact on natural topography
- The overall form of architectural elements should respond to the landscape and its natural elements or patterns; including plantings, stormwater flows, or topography.
- The construction method of all canopies, furniture elements, or infrastructure must minimize or eliminate any support columns.
- Each element and its components shall express the construction method and materials in a way to reveal and not conceal the tectonics.
- Enhance the site as a place for pedestrians
- Provide user comfort, safety, and accessibility.



Park Spatial Components

- Parks should be composed with a hierarchy of circulation pathways, social nodes, and design elements.
- A variety of green space should be included depending on the type or purpose of the park; occupiable open space, ornamental / educational gardens, or edible community gardens are all possible.
- Any built infrastructure included should work with the spatial geometry and not appear forced.
- Connections and relationships between the park and surrounding public spaces or buildings should appear natural without visual edge breaks or disturbances.
- Architectural elements should be incorporated into the landscape to guide movement and boundaries, such as seating areas, and provide pedestrian flow directionality.
- Where an adjacent space, bridge, or other element enters a park, landscaping should be used to guide pedestrians on or off the landing and lead them with directionality.
- Any obstructions such as seating or structural members should be avoided near these landing zones.
- Co-locate with other public amenities such as buildings, shops, and restaurants.
- Frame edges and provide overlooks

Articulations / Details

- Natural patterns and articulations will create a blend between the architectural and ecological elements of the site.
- Landscaped areas along the main circulation shall help to add variations to pathways.
- Fewer larger gestures should be used in lieu of multiple smaller gestures.
- Exposed structural members will create a repetitive element that gives human scale and creates boundaries.
- Details and ornamentation shall only be used if they are functional elements, contributing to views, or aiding the definition of implicit boundaries.
- The relationship between solid vs void will remain as permeable as possible to maintain an open environment.
- Any architectural element shall not block access to view corridors, cast excessive shade onto another space underneath, or create unfavorable wind conditions for site occupants.
- Trim elements will help contain edge conditions and terminate details
- Every face should be articulated.

Materials / Color

- Accent colors and materials shall be used minimally
- Materials should reveal their true nature.
- Materials should be durable and anti-corrosive.
- The color shall reflect the respective phases scheme.
- Every face shall be articulated with proper colors and materials.
- Vegetation and planters as a color/ material should be used abundantly.
- Distinctive colors: (concrete, glass, white paint, metal panels, wood)

Lighting and Visibility

DESCRIPTION

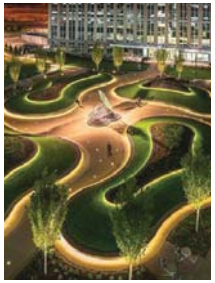
Site lighting shall be used for the purposes of maintaining pedestrian and site safety, wayfinding, and accessibility throughout all hours of the day or night. All lighting will be LED to conserve energy and reduce glare. As a residential neighborhood and community district, the site is always open to some degree, and proper site lighting is an important element to maintaining a positive user experience. With this in mind, a special consideration should be given to how the space and its users (and their needs) may change along the progression of a day or night.

Guidelines and Character

- There shall be a consistent, while varied, lighting character throughout the site.
- Walkways shall contain an included lighting element throughout the path that illuminates pedestrians to maximize safety and accessibility while minimizing excessive light pollution.
- Lighting assemblies must minimize or eliminate any excessive light spill effect on surrounding buildings, roadways, and natural spaces.
- Lighting assemblies shall express the construction method and materials in a way to reveal and not conceal the tectonics.
- All general site lighting shall consist of energy efficient and / or renewable energy-powered lighting systems, such as individual photo voltaic panels or wind turbines.
- Site lighting assemblies and placement shall focus on limiting light pollution on surrounding buildings, roadways, and natural spaces.
- Underlighting and indirect lighting systems are encouraged to maximize user visibility; this limits glare and contrast to create a more natural lighting environment.
- Concealing the light source, through architectural integration or the inclusion of an additional lighting shield, will create a more natural lighting environment.
- Fixture aesthetics should be designed to enhance the surrounding development.
- Lighting temperature may change to create experiences or delineate spaces

Plaza Lighting

- Plazas shall have a combination of overhead pole lighting and pedestrian scale bollard and cove lighting
- Each plaza will include a pedestrian Emergency call station with a distinctive light
- Lighting must consider day time, evening, and night time illumination
- Lighting must consider surrounding lighting for appropriate illumination
- Light fixture design should tell a story through references



Bridge Lighting

- Bridges shall have a combination of pedestrian level lighting elements mixed with overhead or cove conditions.
- Bridge lighting should try to conceal lighting elements as to not cause obstructions
- Fixtures should use trims and diffusers to block direct views of the light

Roadway Lighting

- Appropriate overhead lighting should maintain a visible roadway at all times
- Non-glare lighting fixtures should be used to minimize impact on drivers
- Crosswalks and woonerf streets near high-pedestrian traffic areas shall include human-scale lighting elements to maximize pedestrian awareness.
- Light pole aesthetics should consider the surrounding context.
- All city and county standards will apply unless a variance is provided.

Amphitheater Lighting

- Ground mounted landscape lighting fixtures should be used as accents
- Cove lighting should be used in areas where the path of travel needs lit but distractions are unwelcome
- Fixtures should be located and aimed in a way to minimize glare
- Fixtures should not obstruct view of the focal point

Pedestrian Pathway Lighting

- These walkways shall be lit by bollard type lighting or pole lighting if covering a larger area.
- These shall not obstruct the path of travel
- These fixtures should be located in such a way that their proximity to the path gives adequate illumination
- Ground mounted accent lights should highlight vegetation or ensign elements.

Materials / Color

- Accent colors and materials shall be used minimally
- Materials should reveal their true nature.
- Materials should be durable and anti-corrosive.
- The color shall reflect the respective phases scheme.
- A fixture color palette should be determined and remain consistent at least in each phase

Signage and Navigation

DESCRIPTION

All signage shall comply with city and state rules and regulations including the state Land Use Ordinance and outdoor advertising laws. The signage should also comply with the Aiea and Salt lake neighborhood signage standards as this property borders both.

These signage guidelines look at the design and placement of on site signage, aimed at setting consistency throughout the NASED site. The project will develop a unique design language for signage and will also take cues from local surrounding signage to ensure appropriate and contextual relationships are maintained. All signage shall have a commonality of materials, proportions, and typology that creates the NASED signage character.

General

- Hawaii has a long history of regulating size and placement of signs to limit visual distractions that protects the natural beauty of the state.
- Standards in relation to size, location, placement, motion, illumination, height, and setbacks must be followed.

Prohibited Signs

- Wind driven or portable signs
- Flashing signs
- Signs that constitute a traffic hazard due to size, location, movement, color, content, or illumination.
- Advertisements for activity not conducted on the premises.
- Aerial advertisements
- Signs on medians, light poles, trees, or within the right of way.
- Banners displayed longer than 7 days.
- Flyers placed on vertical surfaces
- Billboards

Signage Types

The specific design of these elements shall be determined at the time of installation based upon the location and type. The designs must be reviewed and approved before installation. In order to maintain consistency, all signs that portray a particular type should consider using similar materials and proportions. As this site is a new entertainment district (previously BMX-3) and may have specific special district rules and standards, specific heights and setbacks will not be quantified.

The sign types addressed here are

1) Grand sign

2) Main Accessway sign

3) Wayfinding sign

4) Streetscape sign

5) Marketing Sign

Grand Sign

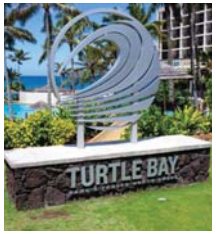
The purpose of the grand sign is to guide people to the development from off site as a means of wayfinding. This should be placed in a highly visible location such as near a prominent intersection that is recognized as being a part of the site from a distance. This sign type is important as it sets the image and quality of the overall development. This sign should take precautions to ensure it is not seen or treated as a billboard. The following are a list of design characteristics.

- The shape of the sign may follow the path of adjacent roadways
- The shape of the sign shall complement the overall geometry of the surrounding structures
- The sign shall not obstruct views of what is beyond or internal views outward.
- The name of the site (NASED) shall be the only identification
- Materiality should draw language from structures on site
- Foliage and landscaping should be an integral part of the composition
- Lettering may appear on both sides

Main Accessway Signs

The main accessway signs announce to occupants arriving that they are now entering the new aloha stadium entertainment district (NASED). These signs should appear at the entrance locations on Kamehameha Highway and Salt Lake boulevard. These signs should be incorporated into the streetscape and contain the following characteristics.

- Gateway entrance name
- District name
- Incorporation into existing intersection design language
- Constructed of materials that complement surrounding structures
- Do not block lines of sight
- Visually attractive and not obtrusive
- Appropriately scaled with proportions relating to contextual cues.



Wayfinding Signs

Wayfinding signage applies to vehicular and pedestrian traffic. The purpose of these signs are to direct people to their respective destinations on site, such as parks, hotels, residences, businesses, parking garages, stadium entrances, and drop off zones to name a few. The wayfinding signage may be seen at path entrances, street crossings, major plazas, parking garage exits, and gathering areas. This sign type is normally viewed while in motion, so the design should pay attention to the nature of the way the sign is read. Signs shall comply with the following characteristics.

- Typology shall be an easily readable font
- Vehicular and pedestrian wayfinding signage should be similar, but contain distinctive features for different viewing types.
- Wayfinding signs for vehicles should not obstruct pedestrian pathways or right of way.
- Wayfinding signs for pedestrians should be easily readable from a standard standing height.
- Profiles shall be kept slender to appear transparent from non viewing angles
- Materiality shall be durable and anti corrosive
- Materials should compliment surrounding context

Streetscape Signs

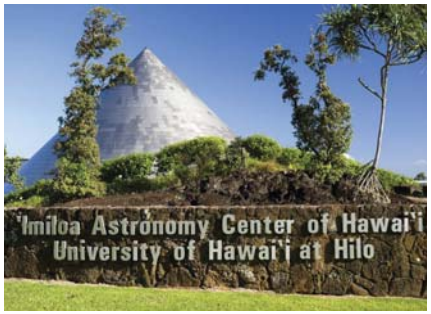
The streetscape signage shall be incorporated along major roadways, at intersections, at street crossings, in front of parking locations, and near areas of roadways subjected to changes in traffic patterns. Their purpose is to inform people of where they are currently and where they are going. The intent is that these signs blend into the surroundings so that they aren't visually intrusive, but allow people to gain knowledge on their surroundings. These signs should contain the following characteristics.

- Natural in appearance
- Thin and slender in profile
- Emphasize materiality over painted colors.
- Similar design language to street signage but distinctively different
- Incorporation with other contextual elements such as greenscape or street furniture over stand alone signage.

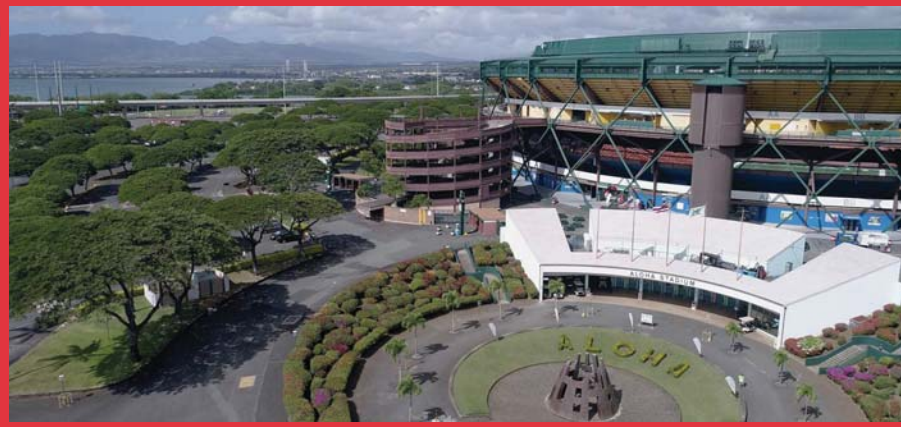
Marketing Signage

This type of signage refers to signs that advertise the name of the establishment such as retailers, restaurants, and offices. These signs are meant to signify the business and draw attention to their activity. These signs shall comply with the following characteristics.

- Do not obstruct the pedestrian line of sight.
- Unobtrusive to the overall architectural composition
- Placed above the entrance to the facility
- Do not hang or provide places for animal nesting
- Do not move or cause noise
- Have a common material and typology for all tenants per structure.
- Use a material and color palette that is complementary to the architectural design.



Draft December 16, 2020



New Aloha Stadium Entertainment District

PROGRAMMATIC MASTER PLAN

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Appendix A-2:

Viewshed Analysis

3.7

VIEW SHED ANALYSIS

The goal of the design of the district is to preserve the value of the overall viewsheds from the surrounding areas. Because there is already a stadium currently on site, the views will shift but should not be diminished. To accomplish this, the master plan must follow building height and density requirements throughout the site to create a dynamic addition to the views from the surrounding areas while also paying special consideration to framing key natural and man made elements that are valued in current viewsheds. This same care should be made when considering views from the site as well. Using massing to frame views of the Koolau Range, Pearl Harbor, and other important features surrounding the site is imperative.

Beyond the spatial considerations of massing on site, the design of new buildings and open spaces must concentrate on positively impacting views both on and off site. No blank or unadorned walls should be left to spoil a view. The addition of vegetation, artwork, or appealing screening elements can all be used to eliminate any eyesores. There should be locations throughout the site that are specially designed to emphasize appealing views surrounding the site such as views from the concourse levels of the new stadium that look over Pearl Harbor or views from parks and gardens that frame the Koolau or Waianae Ranges.

View shed studies are made by the exploration of the surrounding areas of the site and identifying where important views and vistas currently exist. A conceptual model of the new development is then superimposed in images from those locations in order to determine the affect the development will have on the views. Eight view shed studies were completed to examine the impact the NASED development will have on the views surrounding the site. Additional view shed studies should be done with any major changes to the design of the master plan.

The current studies are taken from eight publicly accessible locations:

1. from Rainbow Bay Marina, 2. from Aiea Bay State Recreation Area, 3. from Aiea Heights Dr. near Kihewa Pl, 4. from the corner of Poko Rd. and Poko Pl, 5. from the corner of Hālawa Heights Rd. and Ulune St, 6. from the corner of Kahuapaani St. and Salt Lake Blvd, 7. from Ohenana Loop, and 8. from the corner of Kalaloa St. and Salt Lake Blvd.

These locations can be seen on the following map.

Appendix A-3:

Site and Architectural Guidelines

3.12

ARCHITECTURAL GUIDELINES

Building Type Standards

The programmatic masterplan of the 'New Aloha Stadium Entertainment District' is made up of an initial first phase and subsequent future phases which should all work together to contribute to the success of this project. Within each of these phases are many building types. The purpose of these architectural guidelines is to point out the various building types, features, character, and massing. These standards intend to describe a minimum level of quality while assisting other standards mentioned in this document. Per the NASED Program, the non-stadium building types fall into 5 categories: residential, retail, office, hotel and structured parking.

The predominant building types in this portion are found in the key below and are also color coded for reference. The requirements for each type are outlined in the consecutive pages.

Residential High Rise

DESCRIPTION

The high rise residential building is a multi-family structure of the highest density. These towers, which are the tallest buildings on the site, are composed of various configurations of units that range from studios to one-bedroom units to multiple-bedroom apartments.

PREDOMINANT FEATURES

Entry

- There shall be minimum one entrance into the tower from ground level and minimum one entrance from inside the garage at the residential parking level.
- The entryway must be connected to a lobby that contains vertical circulation leading occupants to either their respective floor or to the main amenity deck where the central core can be accessed.
- The street level entrance must be the primary entry way and shall be clearly visible from public spaces.
- The garage entrance should be aligned with the central core and provide access to all building floors. It will we be a prominent feature in the garage that is visible and easily found,
- The primary entrance may stand out in relation to the surrounding context by using covered projections or covered recesses into the structure that provide an experience sheltered from the outside elements.
- The area located directly in front of the street level entrance should not be constrained by other site elements and should contain spaces for seating.

Fenestration

- Fenestration will be provided by doors and windows.
- Glazing within the fenestration may change colors, tints, and transparency depending on the location.
- Glazing shall maximize light transmittance while remaining at a low emissivity. This will ensure ample light is received with minimal heat gain, maximizing the sustainability initiatives of the masterplan.
- Window/wall glazing will maximize views by reducing the mullion amounts and widths while also extending floor to ceiling at most instances.
- There must be operable windows provided in accordance with the number of sleeping rooms in each unit; minimum of one per unit.
- Window AC units projecting from the facade are prohibited.
- Locations with glazing that do not have a balcony above providing shade will be allowed to provide horizontal shade elements that do not exceed 4' extensions.

Lanai / Balcony

- Each unit will be provided with a minimum of one outdoor space.
- Balconies must be occupiable.
- Vegetated balconies with green roofs can be provided on building edges that give residents access to green spaces raised off ground level
- Railings shall be composed of transparent glazing, not steel post railings.
- Railings shall not be suspended via tension members that obstruct views.

Amenity Deck

- Amenity decks may be shared between multiple towers.
- The amenity deck cannot be accessible to the general public.
- Landscaping with areas for vegetation, trees, and grass lawns must be incorporated.
- Larger open gathering areas, as well as more private smaller spaces with seating shall be provided.

- Amenity deck features for residents shall include, but not be limited to: pools, cabanas, patio furniture, seating, fire pits, canopies, grills, playgrounds, community gardens, and pavilions
- Entrances to buildings from the amenity deck shall be prominent features.

- In buildings, at the amenity deck level, other recreational activities such as gym's, saunas, and theaters may be incorporated.
- Areas to serve food/beverages may be included in certain amenity decks.

Equipment

- If outdoor mechanical/electrical/communication equipment is needed, it must be screened from direct views. The screen system must also blend into the architectural character.
- If equipment is attached to the structure it shall blend into the building massing.

- PV equipment for sustainability initiatives shall be located on unoccupied roof decks.

Architectural Character

- High rises will utilize a double loaded corridor to maximize rentable SF and minimize the circulation SF
- These towers will use podium construction, otherwise known as pedestal or platform construction.
- Each tower will have their respective entrance at ground level and at garage level.
- Buildings shall express the construction method and materials in a way to reveal and not conceal the buildings tectonics.

Building Massing

- High-rise buildings will be eight stories or taller in height.
- Floor to floor heights at most floors shall be approximately 9'-6", amenity decks shall be approximately 15'-0", and penthouses shall be approximately 12'-0".
- The entrance at the ground floor will appear as a continuation of the vertical massing
- Units will include balconies and or vegetated patios.
- Facade articulations of projections and indentations will be used for balconies.

- The top of the massing may contain less indoor SF and more usable outdoor space.
- Massing in close proximity must communicate and use elements of the same design language.
- The mass shall closely tie into the concept of the respective phase it is located in through representing a distinctive form.
- The massing roofs shall be flat with areas for green roofs or PV panels.
- Residential towers should be located and oriented to take advantage of views to the mountains or the ocean to particular design elements (parks, corridors, green spaces, stadium, etc.) on site.
- Masses shall not block access to view corridors, cast excessive shade onto another mass, or create unfavorable wind conditions for site occupants.

Frontage

- Each building will contain an individualized entrance
- The street frontage will have a linear progression of spaces leading pedestrians from the street to either a sidewalk or open hardscape space that terminates at the covered entryway.
- The frontage may either be open to a public gathering plaza or down a smaller walkway depending on the location of the site the building is situated in.

Articulations / Details

- Articulations of the facade will create a rhythm through symmetry or asymmetry
- Balconies or projections shall help to break up the mass vertically and horizontally
- Continuous elements extending multiple floors will help to create a cohesive structure.
- Exposed floor slabs will create a repetitive element that gives human scale and breaks down the mass that will be altered through the way the overall massing is treated (tapering, bending, shifting, etc)
- The maximum window to wall ratio should be used to maximize expansive views at these towers. Slightly lower ratios shall be used if units are not equipped with AC.
- Details and ornamentation shall only be used if they are functional elements contributing to building performance, views, or aiding the definition of implicit boundaries.

Materials / Color

- Materials should reflect local vernacular and reveal their true nature.
- Materials should be durable and anti-corrosive.
- Buildings color shall reflect the respective phases scheme and be fully integrated into the design of the entire site.
- Colors/materials should not absorb heat, but reflect using a lighter palette.
- Vegetation and planters as a color/material shall be used as a common thread
- Distinctive colors: (concrete, glass, white paint, metal panels, wood)
- These can be dispersed throughout the high rise section.

Residential Mid Rise

DESCRIPTION

The mid rise residential building is intermediate in height between the low rise and high rise. Mid rise buildings are typically as tall as the street is wide. These structures are composed of various configurations of units that range from one room to a few rooms and are provided with vertical circulation in the form of elevator lifts.

PREDOMINANT FEATURES

Entry

- There shall be one entrance into the tower from ground level and one entrance from inside the garage at the residential parking level.
- The entryway must be connected to a lobby that contains vertical circulation leading occupants to either their respective floor or to the main amenity deck where the central core can be accessed.
- The street level entrance must be the primary entry way and shall be clearly visible.
- The garage entrance should be aligned with the central core and provide access to all building floors. It will we be a prominent feature in the garage that is visible and easily found,
- The primary entrance may stand out in relation to the surrounding context by using covered projections or covered recesses into the structure that provide an experience sheltered from the outside elements.
- The area located directly in front of the street level entrance should not be constrained by other site elements and should contain spaces for seating.

Fenestration

- Fenestration will be provided by doors and windows.
- Glazing within the fenestration may change colors, tints, and transparency depending on the location.
- Glazing shall maximize light transmittance while remaining at a low emissivity. This will ensure ample light is received with minimal heat gain, maximizing the sustainability initiatives of the masterplan.
- Window/wall glazing will maximize views by extending floor to ceiling at most instances, but will also take privacy into consideration at the lower levels with partial height walls at the exterior.
- There must be operable windows provided in at least one location in each unit.
- Window AC units projecting from the facade are prohibited.
- Locations with glazing that do not have a balcony above providing shade will be allowed to provide horizontal shade elements that do not exceed 4' extrusions.

Lanai / Balcony

- Each unit will be provided with a minimum of one outdoor space.
- Balconies must be occupiable
- Vegetated balconies and green roofs shall be thoughtfully situated within the exterior and should give residents access.
- Railings shall be composed of transparent glazing and not steel post railings where views are unobstructed. Railings in close proximity to other buildings shall be opaque.
- Railings shall not be suspended via tension members that obstruct views.

Amenity Deck

- Amenity decks can be provided in instances raised on a podium.
- This deck can not be accessible to the general public.
- Landscaping with areas for vegetation, trees, and grass lawns must be incorporated.
- Larger open gathering areas, as well as more private smaller spaces with seating shall be provided.
- Some features for residents will include pools, cabanas, patio furniture, seating, fire pits, canopies, grills, playgrounds, community gardens, and pavilions
- Entrances to buildings from the amenity deck shall be prominent features.
- In buildings, at the amenity deck level, other recreational activities such as gym's, saunas, and theaters may be incorporated.
- Areas to serve food/beverages may be included in certain amenity decks.

Equipment

- If outdoor mechanical/electrical/communication equipment is needed, it must be screened from direct views. The screen system must also blend into the architectural character.
- If equipment is attached to the structure it shall blend into the building massing.
- PV equipment for sustainability initiatives shall be located on unoccupied roof decks.

Architectural Character

- Mid rises will utilize a double loaded corridor to maximize rentable SF and minimize the circulation SF
- These buildings will use podium construction, otherwise known as pedestal or platform construction.
- Each building will have their respective entrance at ground level and at garage level.
- Buildings shall express the construction method and materials in a way to reveal and not conceal the buildings tectonics.
- All sides of the building shall reflect these characteristics.

Building Massing

- Buildings will be four stories to seven stories in height.
- Floor to floor heights at most floors shall be approximately 9'-6", amenity decks shall be approximately 15'-0", and penthouses shall be approximately 12'-0".
- Units will include balconies and or vegetated patios.
- Facade articulations of projections and indentations will be used for balconies.
- The top of the massing may contain less indoor SF and more usable outdoor space.
- Massing in close proximity must communicate and use elements of the same design language.
- The mass shall closely tie into the concept of the respective phase it is located in through representing a distinctive form.
- The massing roofs shall be flat with areas for green roofs or PV panels
- Masses shall not block access to view corridors.
- If parking is not provided under the building via podium, garage spaces must be directly accessed by a bridge or connecting pathway.

Frontage

- The frontage may either be open to a public gathering plaza or down a smaller walkway depending on the location of the site the building is situated in.
- If not on a podium, there may be an elevated deck for residents' circulation between units.
- While not directly under the building, retailers may be situated in front of the structure if at public places.

Articulations / Details

- Articulations of the facade will create a rhythm through symmetry or asymmetry
- Balconies or projections shall help to break up the mass vertically and horizontally
- These may be as wide as they are tall, so breaking up the proportions must be considered.

- Details will reflect the composition of the mass and not of the individualized modules.
- The window to wall ratio should be maximized, but also sensitive to privacy at lower levels or areas juxtaposed to towers.
- Ornamentation shall only be used if they are functional elements contributing to building performance, views, or aiding the definition of implicit boundaries.
- The articulations shall reveal how the parts fit into the whole by emphasizing each part separately.

Materials / Color

- Materials should reflect local vernacular and reveal their true nature.
- Materials should be durable and anti-corrosive.
- Buildings color shall reflect the respective phases scheme.
- Colors/materials should not absorb heat, but reflect using a lighter palette.
- Vegetation and planters as a color/material shall be used as a common thread
- Distinctive colors: (concrete, glass, white paint, metal panels, wood).

Residential Low Rise

DESCRIPTION

The low rise residential building is categorized as the lowest in height and may not include elevators. Low rise buildings typically have ground level frontage and may include increased privacy. These structures shall be composed of various configurations of units that range from one room to a few rooms that can be horizontally or vertically connected..

PREDOMINANT FEATURES

Entry

- If ground level units are utilized, a clearly visible front door shall be accessible from the sidewalk by a walkway.
- There shall be a shared primary main entrance to upper level units and secondary access within the building as well.
- Unit entrances can occur through internal corridors, vertical circulation, or ground level doors.
- Stoops, porches, and shaded areas may be used at shared and private entrances.
- The primary entrance should stand out in relation to the surrounding context by using covered projections or covered recesses into the structure that provide an experience sheltered from the outside elements.
- Transitions from the public to private realm through architectural and landscape cues shall be used for delineation.
- The entrance should be raised slightly above grade to increase privacy.
- The area located directly in front of the street level entrance should not contain high traffic circulation or gathering areas.
- If a common landing area where multiple unit entrances open on to is used, it should be designed to be visible from pedestrian routes and avoid more than 2 doors.

Fenestration

- Fenestration will be provided by doors and windows.
- Glazing within the fenestration may change colors, tints, and transparency depending on the location.
- Glazing shall maximize light transmittance while remaining at a low emissivity. This will ensure ample light is received with minimal heat gain, maximizing the sustainability initiatives of the masterplan.

- Window/wall glazing shall maximize views above the first floor and will take privacy into consideration at the lower levels.
- Fenestration shall be situated within the facade in a way that does not allow for direct views into units from other locations nearby..
- There must be operable windows provided in at least one location in each unit.
- Window AC units projecting from the facade are prohibited.
- Locations with glazing that do not have a balcony above providing shade will be allowed to provide horizontal shade elements that do not exceed 4' extrusions.

Lanai / Balcony

- Each unit shall be provided with a minimum of one outdoor space if possible.
- Balconies must be occupiable.
- Vegetated balconies and green roofs shall be thoughtfully situated within the exterior and should give residents access.
- Railings shall be composed of transparent glazing where views are unobstructed.
- Railings in close proximity to other buildings shall be opaque.

Amenity Areas

- A minimum of one shared indoor or outdoor amenity area shall be included as part of the low rise building.
- If located at grade it may open to streets or walkways to provide access.
- This area must be framed appropriately within the massing.
- This area shall be able to connect with other open spaces when possible.
- This should provide spaces for activity, seating, shade structures, children's play equipment, and barbecues.
- This area shall have landscaping to offer privacy, screening, and act as an interface with the public realm.

Equipment

- If outdoor mechanical/electrical/communication equipment is needed, it must be screened from direct views. The screen system must also blend into the architectural character.
- If equipment is attached to the structure it shall blend into the building massing.
- PV equipment for sustainability initiatives shall be located on unoccupied roof decks.
- Equipment shall not be located in close proximity to entrances.

Architectural Character

- Low rises may consist of townhomes, stacked townhomes, back to back townhomes, and apartment buildings.
- After analyzing the surrounding context, the low rise building type selected should fit into the overall environment.
- Garage access may be front or rear if not separated from the structure.
- Each building will have their respective entrance at ground level.
- Buildings shall express the construction method and materials in a way to reveal and not conceal the buildings tectonics.
- There should be distinct front and rear conditions.
- Side and back wall shall be shared with units vertically and or horizontally.
- All sides of the building shall reflect these characteristics.

Building Massing

- Buildings will be one to four stories in height.
- Floor to floor heights at most floors shall be approximately 9'-6".
- Units will include balconies and or vegetated patios.
- Facade articulations of projections and indentations will be used for balconies.
- Shared vertical circulation may serve as the anchor.
- Buildings should provide appropriate transitions in scale to nearby buildings and open spaces.
- Generous setbacks shall be used to provide privacy for ground level units.

- Massing should help to create different front and rear yard areas.
- The top of the massing may contain less indoor SF and more usable outdoor space.
- Massing in close proximity must communicate and use elements of the same design language.
- Buildings shall align with neighboring patterns.
- The mass shall closely tie into the concept of the respective phase it is located in through representing a distinctive form.
- The massing roofs shall be flat with areas for green roofs or PV panels
- Parking shall be integrated within the building or within a reasonable walking distance.
- Reduce conditions where buildings overlook each other to ensure sunlight and skylight views.

Frontage

- The frontage may either be open to a public gathering plaza or down a smaller walkway depending on the location of the site the building is situated in.
- Landscape transitions shall be used to soften the building edge.
- Raised platforms no greater than 5 steps or covered projections should be utilized.
- Relationship to grade change shall be maintained by stepping buildings or segments of buildings across the site.

Articulations / Details

- Articulations of the facade will create a rhythm through symmetry or asymmetry
- Balconies or projections shall help to break up the mass vertically and horizontally
- Details will proportionally help distinguish the individualized modules.
- The window to wall ratio should be maximized, but also sensitive to privacy at lower levels.
- Ornamentation shall only be used if they are functional elements contributing to building performance, views, or aiding the definition of implicit boundaries.
- The articulations shall reveal how the parts fit into the whole by emphasizing each part separately.
- Facades may provide details for each unit or appear as one continuous structure.
- Facade bays may be separated through recesses, reveals, material, rhythm, fenestration, fire break walls, roof top spaces, landings, and porches.
- Each facade face shall respond to the site conditions.
- Provide variations in architectural design between buildings for a varied but cohesive collection of structures.

Materials / Color

- Materials should reflect local vernacular and reveal their true nature.
- Materials should be durable and anti-corrosive.
- Buildings color shall reflect the respective phases scheme.
- Colors/materials should not absorb heat, but reflect using a lighter palette.
- Vegetation and planters as a color/material shall be used as a common thread
- Distinctive colors: (stone, concrete, glass, white paint, metal panels, wood).

Retail / Entertainment

DESCRIPTION

The retail / entertainment buildings will be either one or two story structures that provide a variety of programmatic functions ranging from restaurants and bars to boutiques and supermarkets. The distribution of spaces and the tenants that occupy these spaces will be located in a place to best serve the surrounding context. Big box retailers shall be located in highly trafficked areas, whereas smaller clothing shops may be located along pedestrian pathways.

PREDOMINANT FEATURES

Entry

- The entrance can use covered projections or recesses into the facade that provide an experience sheltered from the outside elements.
- Entries should consider architectural features with distinguishing features.
- If the entrance is at ground level, the area located directly in front of the storefront should not block visibility of the storefront or signage.
- Second level entrances should not protrude into the path of circulation

Fenestration

- The storefront adjacent to pedestrian traffic should use a minimum fenestration amount of 40%.
- Visual transparency should be maximized along the street facing facade.
- Storefronts should be individual expressions of the tenants identity that will help break up monotonous pathways
- Glazing within the fenestration may change colors, tints, and transparency depending on the retailer.
- Glazing shall maximize light transmittance while remaining at a low emissivity. This will ensure ample light is received with minimal heat gain, maximizing the sustainability initiatives of the masterplan.
- Considerations shall be given to the larger retailers to ensure they are remaining within the character of the surroundings.
- The storefront should enhance the pedestrian environment
- Door proportions should be vertical remaining taller than overall width.
- Slight extrusions should be avoided to deter animal nesting.

Patio

- Outdoor patio spaces for seating are encouraged to activate street frontages.
- Partial height walls and railings will provide transitions between public and private realms
- Vegetation within the exterior is encouraged.
- Patio spaces should compliment the buildings architectural style
- Railings that increase transparency should be used to avoid unwanted activity.

Equipment

- If outdoor mechanical/electrical/communication equipment is needed, it must be screened from direct views. The screen system must also blend into the architectural character.
- If equipment is attached to the structure it shall blend into the building massing.
- Loading docks, dumpsters, or other supporting spaces will be located in unnoticeable areas screened from direct viewing.

Architectural Character

- Retail spaces will utilize single and double level structures.
- Retailers are to activate multiple facade faces for the storefront if available.
- First floor canopy/shading element will be used for second floor walkways to minimize circulation square footage.
- Second level circulation shall be covered with a canopy for exterior conditions.
- There shall be vertical circulation in the form of elevators and escalators to access the second floor.
- All walkways shall be covered/sheltered to enhance the pedestrian walking experience.
- Buildings shall express the construction method and materials in a way to reveal and not conceal the buildings tectonics.
- All visible sides of the retail space shall be activated through displays, frontage, art, vegetation, or other possibilities.

Building Massing

- Buildings will be one or two levels in height.
- Floor to floor heights at the first level shall be 18'-0" and 15'-0" at the second level.
- Retail buildings will include outdoor walkways, patios, vegetation, planters, outdoor seating, and experiential landscape elements.
- Second level walkways shall be approximately 10'-0" in width to handle stadium event traffic.
- The corners of second level retail buildings should be used for vertical circulation and outdoor patio space.
- Massing in close proximity must communicate and use elements of the same design language.
- Design elements, such as canopies, shall change in form based on the location and phase of construction to create distinguishable regions within the masterplan.
- The mass shall closely tie into the concept of the respective phase it is located in through representing a distinctive form.
- The massing roofs shall be flat with areas for green roofs or PV panels.
- Bridges and connecting pathways can be utilized to lead pedestrians to ground floor plazas or second level spaces.

Frontage

- The frontage may either be open to a public gathering plaza or down a smaller walkway depending on the location of the site the building is situated in.
- Frontal approach sidewalk shall be no less than 10'-0" wide.
- Columns and structural members should be used to implicitly capture space.
- Street parking and other activity generating elements shall be provided in front of tenant spaces if possible.
- Storefront windows should be used frequently to enhance visibility and enliven walkways.
- Larger retailers can reduce their transparency requirements, but shall be required to include other architectural treatments on the remainder of the frontage.
- Frontage should be articulated in a way that varies materials, colors, windows, entrances, canopies, and patios.
- Protrusions and the reversal shall be coordinated to create a rhythm within the frontage.

Materials / Color

- Materials used in each retail building should create a palette that blends in with other surrounding structures.
- Materials should be durable and anti-corrosive.
- Buildings color shall reflect the respective phases scheme.
- Vegetation and planters as a color/material shall be used as a common thread
- Distinctive colors: (concrete, glass, white paint, stone, metal panels, wood).
- High quality durable materials shall be used.
- Awnings and canopies shall be resistant to fade/ weathering.

Articulations / Details

- Articulations of the facade will create a rhythm through symmetry or asymmetry.
- Building bays should be a minimum of 20'-0" in width.
- No walls shall be left blank or untreated.
- Reveals, recesses, and projections shall help to break up the mass vertically and horizontally
- Details will consider the composition of the mass while creating individualized modules.
- The window to wall ratio should be maximized for increased transparency.
- Ornamentation shall only be used if they are functional elements contributing to building performance, views, or aiding the definition of implicit boundaries.
- Building articulations shall not be removed in lieu of tenant modifications.

Office Low-Rise and Mid-Rise

DESCRIPTION

The office building is a single or multi-tenant structure consisting of a reconfigurable open floor plan. A variety of spaces and sizes can be rented to accommodate small office rooms for the community, or larger spaces needed for companies.

PREDOMINANT FEATURES

Entry

- There shall be one entrance into the tower from ground level which may occur from inside the garage.
- The entryway must be connected to a lobby that contains vertical circulation leading occupants to either their respective floor or to the lowest level of the building where the central core can be accessed.
- There shall be at least one entrance to the building from the exterior at the lowest level of the office.
- The primary entry way shall be clearly visible from public spaces.
- The entry, if not on ground level, must contain at least one elevator at ground level for entry.
- The primary entrance may stand out in relation to the surrounding context by using covered projections or covered recesses into the structure that provide an experience sheltered from the outside elements.
- Offices located above retail space are permitted to use the same vertical circulation.

Fenestration

- Fenestration will be provided by doors and windows.
- Glazing within the fenestration may change colors, tints, and transparency depending on the location as long as they do not compromise the architectural characteristic of the composition.
- Glazing shall maximize light transmittance while remaining at a low emissivity. This will ensure ample light is received with minimal heat gain, maximizing the sustainability initiatives of the masterplan.
- Window/wall glazing will extend floor to ceiling at most instances.
- Operable shades may be installed for increased privacy.
- Locations with glazing that do not have a balcony above providing shade will be allowed to provide horizontal shade elements that do not exceed 4' extrusions.

Canopy

- Canopy conditions may be created by extending floor slabs at the perimeter to create covered conditions below for shading.
- Trellis's and vegetated extrusions may be used for sustainability initiatives and to enhance working environments.
- Canopies may be used as outdoor walkways.
- Railings on canopies shall be composed of transparent glazing, not steel post railings.

Amenity Deck / Common Area

- Amenity decks or common areas shared by the office building tenants shall be located in at least one place per building either indoors or outdoors if permitted.
- This deck can not be accessible to the general public.
- Landscaping with areas for vegetation, trees, and grass lawns must be incorporated.
- One larger open gathering area should be accompanied by more private smaller spaces with seating provided.
- Entrances to buildings from the common areas shall be prominent features.
- Circulation at this level may be indoors or outdoors.

Equipment

- If outdoor mechanical/electrical/communication equipment is needed, it must be screened from direct views. The screen system must also blend into the architectural character.
- If equipment is attached to the structure it shall blend into the building massing.
- PV equipment for sustainability initiatives shall be located on unoccupied roof decks.

Architectural Character

- Office buildings will utilize an outdoor corridor if permitting to maximize rentable SF and minimize the interior circulation SF.
- Office buildings will be built atop parking garages and retail spaces, keeping ground level occupancy for other programmatic elements.
- Buildings shall express the construction method and materials in a way to reveal and not conceal the buildings tectonics.
- A professional appearance should be achieved through the exterior facade.
- Areas with vegetation both on and around the structure shall be well landscaped.

Building Massing

- Floor to floor heights at most floors shall be approximately 12'-0".
- Office levels may include exterior circulation or vegetated canopies.
- Facade articulations of projections and indentations will be used for the level below.
- The top of the massing may contain less indoor SF and more usable outdoor space.
- Massing in close proximity must communicate and use elements of the same design language.
- The mass shall closely tie into the concept of the respective phase it is located in through representing a distinctive form.
- The massing roofs shall be flat with areas for green roofs or PV panels
- Masses shall gradually taper as levels increase in height.
- Masses shall remain horizontally proportioned.
- The mass shall react to contextual elements if in close proximity to an area with lower/higher heights.

Frontage

- Each tenant may not have an individual exterior entrance if an internal corridor is utilized.
- Frontage may not occur on the ground level.
- The frontage shall appear as one continuous component with unified elements creating a professional aesthetic.
- The frontage may either be open to a public gathering plaza or down a smaller walkway depending on the location of the site the building is situated in.

Articulations / Details

- Articulations of the facade will create a rhythm through symmetry or asymmetry
- Balconies or horizontal projections shall help to break up the mass vertically and should use green roof systems if possible.
- Large massing gestures should be carried through the building and other surroundings buildings of similar type.
- Exposed floor slabs will create a repetitive element that gives human scale and breaks down the mass that will be altered through the way the overall massing is treated (tapering, bending, shifting, etc)
- The maximum window to wall ratio should be used.
- Details and ornamentation shall only be used if they are functional elements contributing to building performance, views, or aiding the definition of implicit boundaries.
- Visibility to the exterior shall be maintained without contextual barriers.

Materials / Color

- Materials should reveal their true nature.
- Materials should be durable and anti-corrosive.
- Buildings color shall reflect the respective phases scheme.
- Colors/materials should not absorb heat, but reflect using a lighter palette.
- Vegetation and planters as a color/material shall be used as a common thread
- Distinctive colors: (concrete, glass, white paint, metal panels, wood)
- Office building material may juxtapose materials of structure below (garage, retail, etc.)

Hotel

DESCRIPTION

The hotel building is a structure providing short term lodging and accommodations for guests. Hotels are composed of various configurations of rooms that range from studios to suites.

PREDOMINANT FEATURES

Entry

- There shall be a minimum of one entrance into the hotel from ground level and one entrance from inside the garage at the parking level.
- The primary entryway must be connected to a lobby that contains vertical circulation leading occupants to either their respective floor or to the main amenity deck where the central core can be accessed.
- The street level entrance must be the primary entry way and shall be clearly visible from public spaces.
- Primary entrance doors shall be located in an area facing green space, a plaza, or the street.
- The primary entrance may stand out in relation to the surrounding context by using covered projections or covered recesses into the structure that provide an experience sheltered from the outside elements.
- The garage entrance should be aligned with the central core and provide access to all building floors. It will be a prominent feature in the garage that is visible and easily found.
- The area located directly in front of the street level entrance should not be constrained by other site elements and should contain spaces for seating.

Fenestration

- Fenestration will be provided by doors,windows, storefront systems, and curtain wall systems.
- Glazing within the fenestration may change colors, tints, and transparency depending on the location.
- Glazing shall maximize light transmittance while remaining at a low emissivity. This will ensure ample light is received with minimal heat gain, maximizing the sustainability initiatives of the masterplan.
- Window/wall glazing will maximize views by reducing the mullion amounts and widths while also extending floor to ceiling at most instances.
- Window AC units projecting from the facade are prohibited as well as louvered window exhaust.
- Locations with glazing that do not have a balcony above providing shade will be allowed to provide horizontal shade elements that do not exceed 4' extrusions.

Lanai / Balcony

- Rooms may or may not be provided with an outdoor space.
- Balconies must be occupiable
- Vegetated balconies or green roofs can be provided on balcony spaces.
- Access to outdoor space should be maximized
- Railings shall be composed of transparent glazing, not steel post railings.
- Railings shall not be suspended via tension members that obstruct views.

Amenity Deck

- Amenity decks may be shared between multiple buildings of hotel or residential occupancy.
- A division with lockable entrances must be provided if an amenity deck is shared between hotel and residential occupancies.
- This deck can not be accessible to the general public.
- Landscaping with areas for vegetation, trees, and grass lawns must be incorporated.
- Larger open gathering areas, as well as more private smaller spaces with seating shall be provided.

Architectural Character

- Hotels will utilize either a double loaded corridor or central core corridor to maximize rentable SF and minimize the circulation SF
- Corridors will not be on the exterior
- Hotels will use podium construction, otherwise known as pedestal or platform construction.
- Each hotel will have their respective entrance at ground level and at garage level.
- Buildings shall express the construction method and materials in a way to reveal and not conceal the buildings tectonics.
- The lobby may be on the ground level or amenity deck.
- Upper floors will be used for penthouses and have ample occupiable outdoor space.

- Some features will include pools, cabanas, patio furniture, seating, fire pits, canopies, grills, playgrounds, community gardens, playgrounds, and pavilions.
- Entrances to buildings from the amenity deck shall be prominent features.
- In buildings, at the amenity deck level, other recreational activities such as gym's, saunas, and theaters may be incorporated.
- Areas to serve food/beverages may be included in certain amenity decks.
- The amenity deck architecture must blend into the overall massing of the building

Equipment

- If outdoor mechanical/electrical/communication equipment is needed, it must be screened from direct views. The screen system must also blend into the architectural character.
- If equipment is attached to the structure it shall blend into the building massing.
- PV equipment for sustainability initiatives shall be located on unoccupied roof decks.

Building Massing

- Floor to floor heights at most floors shall be approximately 9'-6", amenity decks shall be approximately 15'-0", and penthouses shall be approximately 12'-0".
- The entrance at the ground floor will appear as a continuation of the vertical massing
- Rooms may include balconies and or vegetated patios.
- Facade articulations of projections and indentations will be used for balconies.
- The top of the massing may contain less indoor SF and more usable outdoor space.
- Massing in close proximity must communicate and use elements of the same design language.
- If multiple buildings are built atop the same garage they shall communicate similar massing techniques.
- The mass shall closely tie into the concept of the respective phase it is located in through representing a distinctive form.
- The massing roofs shall be flat with areas for green roofs or PV panels
- Masses shall not block access to view corridors, cast excessive shade onto another mass, or create unfavorable wind conditions for site occupants.

Frontage

- Each building will contain an individualized entrance
- The street frontage will have a linear progression of spaces leading pedestrians from the street to either a sidewalk or open hardscape space that terminates at the covered entryway.
- Generous landscaping and trees should be placed along the hotel frontage at all sides of the structure.
- The frontage shall contrast hardscape areas of dense pedestrians with open green space.
- A usable outdoor greenscape area shall be located in close proximity to the hotel frontage.
- Ridesharing drop off/pick up areas shall be located within a visible and reasonable walking distance to the frontage.
- The frontage may either be open to a public gathering plaza or down a smaller walkway depending on the location of the site the building is situated in.

Articulations / Details

- Symmetrical or asymmetrical articulations of the facade will create a harmonious composition.

- Balconies or projections shall help to break up the mass vertically and horizontally.
- Fewer larger gestures should be used in lieu of multiple smaller gestures.
- Continuous elements extending multiple floors will help to create a cohesive structure.
- Exposed floor slabs will create a repetitive element that gives human scale and breaks down the mass that will be altered through the way the overall massing is treated (tapering, bending, shifting, etc)
- The maximum window to wall ratio should be used to maximize expansive views at these structures.
- Details and ornamentation shall only be used if they are functional elements contributing to building performance, views, or aiding the definition of implicit boundaries.
- Fenestration vs solid areas can help define unit modules.
- Shadow trim elements will help promote the appearance of horizontality.
- Every face should be articulated in a unique way that compliments the overall building composition.

Materials / Color

- Materials should reveal their true nature.
- Hotel specific colors that stray from the masterplan palette shall be used minimally as accents.
- Materials should be durable and anti-corrosive.
- Buildings color shall reflect the respective phases scheme.
- Colors/materials should not absorb heat, but reflect using a lighter palette.
- Vegetation and planters as a color/material shall be used as a common thread
- Distinctive colors: (concrete, glass, white paint, metal panels, wood)

Mixed Use

DESCRIPTION

The mixed use building is defined as having three primary components : a mid or high rise residential tower (adhering to the relevant set of design guidelines) sitting atop an appropriately-sized parking structure (adhering to the relevant set of design guidelines) and wrapped in a variety of secondary uses, such as retail storefronts, office / commercial space, or low / mid-rise residential live-work units. Pedestrian-scale storefronts and public spaces are placed at or near ground level with architectural setbacks on higher levels, allowing for increased public space and amenities via walkways, landscaped roof decks, and lanais.

PREDOMINANT FEATURES

- **Residential towers included in Mixed Use buildings shall comply with their respective design guidelines as specified.
- **Retail components included in Mixed Use buildings shall comply with their respective design guidelines as specified.

Entry

- Entrances can use covered projections or recesses into the facade that provide an experience sheltered from the outside elements.
- The area located directly in front of the retail storefront should not block visibility of the storefront or signage.
- Second level entrances should not protrude into the path of circulation
- There shall be one entrance into the residential tower from ground level and one entrance from inside the garage at the residential parking level
- Residential and live-work units located along public walkways and retail corridors shall have private entrances with a clear delineation between public and private spaces.
- Secondary entrances for live-work and retail components shall be located in the garage for ease of access to tenants and service needs.

Fenestration

- Fenestration will be provided by doors and windows.
- There must be operable windows provided in at least one location in each residential unit.
- Window AC units projecting from the facade are prohibited.
- Storefront glazing will maximize views in and out of retail spaces with limited obstructions
- Retail storefront should enhance the pedestrian environment

- Door proportions should be vertical remaining taller than overall width.
- Slight extrusions should be avoided to deter animal nesting.
- The storefront adjacent to pedestrian traffic should use a minimum fenestration amount of 40%.
- Visual transparency should be maximized along the street facing facade.
- Storefronts should be individual expressions of the tenants identity that will help break up monotonous pathways
- Glazing within the fenestration may change colors, tints, and transparency depending on the retailer.
- Glazing shall maximize light transmittance while remaining at a low emissivity. This will ensure ample light is received with minimal heat gain, maximizing the sustainability initiatives of the masterplan.
- Considerations shall be given to the larger retailers to ensure they are remaining within the character of the surroundings.

Lanai / Balcony / Patio

- Upper and ground level mixed use tenant spaces should be connected via public pedestrian walkways and vegetated corridors
- Each residential unit will be provided with a minimum of one private outdoor space
- Balconies must be occupiable
- Vegetated balconies with green roofs can be provided on building edges that give residents access to green spaces raised off ground level
- Railings shall be composed of transparent glazing, not steel post railings.
- Lanais shall not be suspended via tension members that obstruct views.
- Residential live-work units located along public walkways and retail corridors shall have private outdoor space separated from the public right of way.
- Outdoor patio spaces for seating are encouraged to activate street frontages and elevated walkways
- Vegetation within the exterior, along walkways and around entrances is encouraged.
- Patio spaces should complement the buildings architectural style

Private Amenity Deck

- Amenity decks may be shared between multiple buildings of hotel or residential occupancy.
- A division with lockable entrances must be provided if an amenity deck is shared between hotel and residential occupancies.
- This deck cannot be accessible to the general public.
- Landscaping with areas for vegetation, trees, and grass lawns must be incorporated.

- Larger open gathering areas, as well as more private smaller spaces with seating shall be provided.
- Some features will include pools, cabanas, patio furniture, seating, fire pits, canopies, grills, playgrounds, community gardens, playgrounds, and pavilions.
- Entrances to buildings from the amenity deck shall be prominent features.
- In buildings, at the amenity deck level, other recreational activities such as gym's, saunas, and theaters may be incorporated.
- Areas to serve food/beverages may be included in certain amenity decks.
- The amenity deck architecture must blend into the overall massing of the building

Equipment

- If outdoor mechanical/electrical/communication equipment is needed, it must be screened from direct views. The screen system must also blend into the architectural character.

- If equipment is attached to the structure it shall blend into the building massing.
- PV equipment for sustainability initiatives shall be located on unoccupied roof decks.
- Loading docks, dumpsters, or other supporting spaces will be located in unnoticeable areas screened from direct viewing.

Architectural Character

- High rises will utilize a double loaded corridor to maximize rentable SF and minimize the circulation SF
- These towers will use podium construction, otherwise known as pedestal or platform construction.
- Each tower will have their respective entrance at ground level and at garage level.
- Buildings shall express the construction method and materials in a way to reveal and not conceal the buildings tectonics.
- Retail spaces will utilize single and double level structures.
- Retailers are to activate multiple facade faces for the storefront if available.
- First floor canopy/shading element will be used for second floor walkways to minimize circulation square footage.
- Second level circulation shall be covered with a canopy for exterior conditions.
- There shall be ADA compliant vertical circulation in the form of elevators and escalators to access the second floor.
- All walkways shall be covered/sheltered to enhance the pedestrian walking experience.
- All visible sides of the retail space shall be activated through displays, frontage, art, vegetation, or other possibilities.
- Partial height walls and railings will provide transitions between public and private realms
- Overhead canopies should be used to provide comfortable shading from sun and weather while tying larger open-air spaces into a continuous pedestrian experience.

Building Massing

- Residential units will include balconies and or vegetated patios.
- Massing in close proximity must communicate and use elements of the same design language.
- The massing roofs shall be flat with areas for green roofs or PV panels
- Masses shall not block access to view corridors, cast excessive shade onto another mass, or create unfavorable wind conditions for site occupants.
- Mixed use buildings will consist of one or two levels of residential live-work units atop one or two levels of retail.
- Floor to floor heights at the first level shall be 18'-0" when attached to a parking structure and 20'-0" when unattached. Floor to floor height will be 15'-0" at the second level.
- Retail buildings will include outdoor walkways, patios, vegetation, planters, outdoor seating, and experiential landscape elements.
- Second level walkways shall be approximately 10'-0" in width to handle stadium event traffic.
- The corners of second level retail buildings should be used for vertical circulation and outdoor patio space.
- Design elements, such as canopies, shall change in form based on the location and phase of construction to create distinguishable regions within the masterplan.
- The mass shall closely tie into the concept of the respective phase it is located in through representing a distinctive form.
- Bridges and connecting pathways can be utilized to lead pedestrians to ground floor plazas or second level spaces.

Frontage

- The street frontage will have a linear progression of spaces leading pedestrians from the street to either a sidewalk or open hardscape space at a covered entryway.
- The frontage may either be open to a public gathering plaza or down a smaller walkway depending on the location of the site the building is situated in and the nature of the entry.
- Frontal approach sidewalk shall be no less than 10'-0" wide.
- Columns and structural members should be used to implicitly capture space.
- Street parking and other activity generating elements shall be provided in front of tenant spaces if possible.
- Storefront windows should be used frequently to enhance visibility and enliven walkways.
- Larger retailers can reduce their transparency requirements but shall be required to include other architectural treatments on the remainder of the frontage.
- Frontage should be articulated in a way that varies materials, colors, windows, entrances, canopies, and patios.
- Protrusions and the reversal shall be coordinated to create a rhythm within the frontage.

Articulations / Details

- Articulations of the facade will create a rhythm through symmetry or asymmetry
- Balconies or projections shall help to break up the mass vertically and horizontally
- Continuous elements extending vertically or horizontally will help to create a cohesive structure.
- Exposed floor slabs will create a repetitive element that gives human scale and breaks down the mass that will be altered through the way the overall massing is treated (tapering, bending, shifting, etc)
- The maximum window to wall ratio should be used to maximize expansive views in towers. Slightly lower ratios and shading strategies shall be used if units are not equipped with AC.
- Details and ornamentation shall only be used if they are functional elements contributing to building performance, views, or aiding the definition of implicit boundaries.
- Building bays should be a minimum of 20'-0" in width.
- No walls shall be left blank or untreated.
- Reveals, recesses, and projections shall help to break up the mass vertically and horizontally
- Details will consider the composition of the mass while creating individualized modules.
- Building articulations shall not be removed in lieu of tenant modifications.

Materials / Color

- Materials used in each building should create a palette that blends in with other surrounding structures.
- Materials should be durable and anti-corrosive.
- Buildings color shall reflect the respective phases scheme.
- Vegetation and planters as a color/material shall be used as a common thread, unifying neighboring buildings to each other as well as to the landscape
- Distinctive colors: (concrete, glass, white paint, stone, metal panels, wood).
- High quality durable materials shall be used.
- Awnings and canopies shall be resistant to fade/ weathering.

PARKING GARAGE

DESCRIPTION

Above-ground parking garage structures will be used to provide adequate parking for the site's programmatic needs. Parking needs and volume will vary depending on the structure's location, adjacent buildings' needs and schedules, and seasonal event peak uses.

PREDOMINANT FEATURES

Entry

- Parking structures shall have a minimum of two entry / exit points to maximize ease of access
- Entries will be clearly delineated in the façade treatment

- Pedestrian entrances and walkways to and from parking stalls will be clearly marked to minimize pedestrian / vehicular hazards
- Parking attendant or automatic gate will be included at entry to manage parking capacity

Fenestration

- Fenestration will be provided by doors and windows if applicable
- Most of the building façade will remain open-air and naturally ventilated with some form of architectural screening

Private Amenity Deck

- Garages serving residential or hotel buildings shall include amenity decks which may be shared between multiple buildings of hotel or residential use.
- A division with lockable entrances must be provided if an amenity deck is shared between hotel and residential occupancies.
- This deck cannot be accessible to the general public.
- Landscaping with areas for vegetation, trees, and grass lawns must be incorporated.
- Larger open gathering areas, as well as more private smaller spaces with seating shall be provided.
- Some features will include pools, cabanas, patio furniture, seating, fire pits, canopies, grills, playgrounds, community gardens, playgrounds, and pavilions.
- Areas to serve food/beverages may be included in certain amenity decks.
- The amenity deck architecture must blend into the overall massing of the building

Equipment

- If outdoor mechanical/electrical/communication equipment is needed, it must be screened from direct views. The screen system must also blend into the architectural character.
- If equipment is attached to the structure it shall blend into the building massing.
- PV equipment for sustainability initiatives shall be located on unoccupied roof decks.

Architectural Character

- Buildings shall express the construction method and materials in a way to reveal and not conceal the buildings tectonics.
- Overall dimensions and structural grid spacing will be determined by parking needs and modules
- Except for necessary vehicular access ramps, floors will remain level whenever possible to allow for potential future retrofits

Building Massing

- Floor to floor heights will be 18'-0" on ground level and 9'-0" for each proceeding parking level.
- Garage heights should be limited to five levels to limit disruption to the pedestrian scale.
- Visual screening using pervious architectural facades and hanging vegetation is encouraged to breakdown the overall structure mass.

Frontage

- A double height ground level increases transparency for pedestrian safety and encourages shared uses
- Columns and structural members should be used to implicitly capture space.

Articulations / Details

- Continuous façade elements extending vertically or horizontally will help to create a cohesive structure.
- Exposed floor slabs will create a repetitive element that gives human scale and breaks down the mass that will be altered through the way the overall massing is treated (tapering, bending, shifting, etc)
- Details and ornamentation shall only be used if they are functional elements contributing to building performance, views, or aiding the definition of implicit boundaries.

Materials / Color

- Materials used in each building should create a palette that blends in with other surrounding structures.
- Materials should be durable and anti-corrosive.
- Buildings color shall reflect the respective phases scheme.
- Vegetation and planters as a color/material shall be used as a common thread, unifying neighboring buildings to each other as well as to the landscape
- Distinctive colors: (concrete, glass, white paint, stone, metal panels, wood).
- High quality durable materials shall be used.

3.13

SITE GUIDELINES

The site of the 'New Aloha Stadium Entertainment District' builds upon the existing stadium lot which is naturally sloped down toward the stream and has a rich history through military and Hawaiian presence. The three main phases composing this site all work together, contributing to the success of this project. Within each of these three phases are a variety of different site conditions that have been closely studied in order to create the site plan, such as the geology, hydrology, topography, vegetation, and climate factors. The purpose of this component is to point out the arrangement of pedestrian circulation and open spaces, which coordinate with the surrounding structures and are influenced by the lighting and signage.

These guidelines intend to describe a minimum level of quality while assisting other guidelines mentioned in this document. They will also help in aiding the organizational stage of the convergence between landscape and architecture.

Pedestrian and Bike Pathways

DESCRIPTION

Pedestrian pathways should consider a wide range of physical activities that extend over a range of contextual characteristics. These pathways shall accommodate the needs and abilities of all pedestrians. The intent of this pedestrian circulation system is to increase accessibility of the site that creates an experiential system, linking all districts of the development for better access and movement. The pathways created on this site are also intended to connect into the network of pedestrian movement outside the site, providing opportunities to connect with the surrounding communities

Principles of Pedestrian Design

- Maximize user experience through the use of public art, street furnishings, vegetation, and interactive elements.
- Place public safety is a top priority
- Integrate bicycles and pedestrians into an interconnected multi-user network
- The pedestrian network should provide a continuous direct route to connect places people want to go.
- The pedestrian paths should become a multi-purpose user friendly environment where activities are encouraged that don't interfere with path functionality.
- Provide well designed beaches and bicycle racks creating pauses at various intervals
- Contain landscaped areas and vegetated barriers
- Provide shading via awnings, trellis structures, and tree canopies

General

- Provide a direct connection to the new aloha stadium and rail station
- Create paths adjacent to the Hālawa stream
- Create safe connections to surrounding context
- Enhance pedestrian crossings at or over intersections
- Consider access to the Pearl Harbor historic trail
- Create safe conditions where bicycles and pedestrians share the same paths.
- Elevate crossings over busy roadways

Sidewalks

- This should be easily accessible to all users
- The path shall have an adequate travel width to accommodate the users this is designated for
- Allow outdoor seating to encroach if adequate width is provided
- Sidewalk corridors shall be safe without threatening conditions present
- These should be continuous pathways
- Landscaping and planting will contribute to visual and psychological comfort
- Widened interactive spaces should be provided along the corridor that allow for standing and sitting.
- These pathways should contribute to the character of the phase or district.
- Zones of furnishing/landscaping zone, pedestrian through zone, and frontage zone will depict activities that occur in such locations along the path
- Serve both transportation and recreation

Bike Lane

- If street parking is provided, the bike lane shall be between the traffic lanes and the parking stalls.
- If street parking is not provided, the bike lane shall be on the outer edge of the road.
- Is street parking is provided on one side of the road, the bike path shall be on the opposing side
- Pathways serving both pedestrians and bicycles should be significantly widened (10 foot wide minimum) for comfortable passing
- Striping or delineation should be highly visible
- Bike lanes shall be 4'-6' wide if sharing roadway with vehicles.
- Bike lanes off of roadways should use a minimum width of 8'
- Bicycle signal heads should be considered at intersections
- Staging areas at path entrances should be included in the design with basic site information
- Colored bicycle lanes should be considered especially at intersections
- Bike racks shall be provided at major entrances and exits to pathways
- Site entrances and exit points in areas that are clearly visible

Crosswalks

- Clarity and visibility on where to cross shall be easily understood by pedestrians and vehicles
- Crosswalks shall be provided at appropriate intervals
- An adequate crossing time accommodating all users will make for a positive pedestrian experience
- Refuge islands (6 feet wide minimum) should be provided to allow segments of roadway to be crossed
- Slow points and traffic calming devices should be used near crossings
- Pedestrian crossing signals for both foot traffic and bike traffic should be considered
- Special paving shall be used at heavily trafficked intersections

Materials / Color

- Materials should be durable and anti-corrosive.
- The color shall reflect the respective phases scheme.
- Vegetation and planters as a color/ material should be used.
- Sidewalks must be firm, stable, and slip resistant
- Colored , patterned, or stamped ground conditions will add distinctive visual appeal
- Thermoplastic markings should be used at crosswalks for increased durability
- High quality street furniture shall be used
- Durable asphalt or concrete shall be used

Pedestrian Bridges

DESCRIPTION

Pedestrian bridges are used throughout the site to provide critical links in the bicycle/pedestrian system to join areas separated by a variety of barriers. These bridges assist in site maneuverability without inhibiting traffic flow below and also traverse the stream on site. This makes for more accessible spaces and increases the usability of the site. Pedestrian bridges will enhance the overall circulation of pedestrians and vehicles on this site creating shorter more pleasurable pedestrian paths and removing the need for crosswalks at specific intersections.

PREDOMINANT FEATURES

Entry and Exit

- Bridges will serve as a gateway into the surrounding community or neighborhood
- Entrance points on to the bridge shall be easily located and at multiple points.
- Entrances at ground level shall be located near drop off zones, highly trafficked areas, or plaza spaces.
- Entrances shall be made accessible for all users
- Ramps shall be optimized for wheelchairs and bicycles
- The landings at entrances shall be wide enough to accommodate all user types
- Ground materials at interaction should react through materiality
- Landscaping should be used to guide pedestrians on or off the bridge and lead them with directionality.
- Any obstructions such as seating or structural members should be avoided near these landing zones
- Landings should spatially expand and not contract at connection points
- Entrance areas may use covered conditions at transitions
- Entrances shall seamlessly blend into the landscape/hardscape.
- Entry and exit widths will be based on the type, volume, and dominant direction of traffic flow.

Railings

- Railings shall enhance visual transparency and not create conditions out of the public line of sight.
- Each bridge may be treated individually, representing the phase or district
- Railings shall blend into the railings of other buildings at points of connection.
- Appropriate railing designs include (wire, cable mesh, glass, wood, balusters, structural, decorative, metal panels).
- Railing should not impede views of vistas, ecological features, or important structures.

Architectural Character

- There shall be one continuous pathway that circulates pedestrians, which may have smaller secondary pathways stemming from the central path.
- The walkway can contain a covered condition that shelters pedestrians from the elements.
- This pathway may undulate in form as it meanders around the multiple points of connection.
- The overall form should respond to the traffic pattern underneath.
- The construction method must minimize or eliminate any support columns.
- The path shall be accessible from various locations.
- This bridge shall express the construction method and materials in a way to reveal and not conceal the tectonics.
- There shall be geometric considerations in relation to the context
- Widened areas that create stopping points will be used at appropriate intervals

Bridge Massing

- Clearance shall maintain a minimum of 14'-0"
- If overcrossing has scenic vistas, additional width should be provided for stopping.
- Areas along the path may widen and narrow but should maintain a minimum width of 10'-0" at any point.
- The ground level entrance will appear as a continuation of the bridges massing language
- Massing in close proximity must communicate and use elements of the same design language.
- Multiple entrances to the same structure shall communicate similar massing techniques.
- The mass shall closely tie into the concept of the respective phase it is located in through representing a distinctive form.
- This mass shall not block access to view corridors, cast excessive shade onto another mass or plaza underneath, or create unfavorable wind conditions for site occupants.
- Should consider the traffic network underneath for proper justification
- Ramps and stairs or escalators should be provided.

Articulations / Details

- Articulations will create a harmonious composition.
- Fewer larger gestures should be used in lieu of multiple smaller gestures.
- Continuous elements extending the length of the bridge will help to create a cohesive structure.
- A slender profile will ensure not to obstruct view corridors on the site.
- Exposed structural members will create add repetition and human scale
- Details and ornamentation shall only be used if they are functional elements, contributing to views, or aiding the definition of implicit boundaries.
- The relationship between solid vs void will remain as permeable as possible to maintain an open environment.
- Trim elements will help contain edge conditions and terminate details
- Every face should be articulated.
- Bridges shall have adequate drainage systems.

Materials / Color

- Accent colors and materials shall be used minimally
- Materials should reveal their true nature.
- Materials should be durable and anti-corrosive and lightweight.
- The color shall reflect the respective phases scheme.
- Every face shall be articulated with proper colors and materials.
- Vegetation and planters as a color/ material should be used.
- Distinctive colors: (concrete, glass, white paint, metal panels, wood)
- Surface should be anti-slip and can use open grating decks, concrete, wood, synthetic materials, or glass.

Public Plazas

DESCRIPTION

As one of the primary outdoor gathering spaces for the site, the public plazas will be critical elements for enhancing the overall pedestrian experience. The public plazas serve as wayfinding nodes that overlay pedestrian circulation and communal spaces with natural and architectural elements while connecting adjacent retailers, garages, residential towers, hotels, and other buildings with nearby open spaces and the larger master plan as a whole. Each plaza shall be a mixture of transient and static space composed of architectural and ecological form.

PREDOMINANT FEATURES

Entry

- Be visible and easily accessible with frontage on streets
- Provide user comfort, safety, and accessibility
- Entrance points into the plaza shall be seamlessly integrated into the surrounding buildings, roadways, and pedestrian spaces
- Plaza spaces shall serve as unifying nodes within the greater master plan
- Plaza spaces should serve as both place and threshold
- Linkages should be created to achieve a coherent network

Railings and Barriers

- Plaza edges and boundaries shall be clearly defined through material palette change or the addition of a barrier, such as a railing, seating element, or planting.
- Railings shall enhance visual transparency and not create conditions out of the public line of sight.
- Railings will all be treated similarly.
- Railings shall blend into the railings of other buildings at points of connection.
- Spatial barriers may not obscure visibility or line of sight among pedestrians, vehicles, cyclists, or retail storefronts.
- Elevated barriers and occupiable zones shall feature natural slope or otherwise accessible accommodations included within the design language.

Plantings and Natural Elements

- Preserve existing trees and natural topography
- Natural elements shall be included in each public space.
- Examples could include community gardens, water features, large decorative planters, or other landscaped elements.
- Native plants are heavily encouraged for the majority of landscaping.
- Site stormwater management elements, such as retention planters, bioswales, or community garden rainwater collection, are encouraged and should be incorporated into the overall design.
- Trees or vegetation that provides shade from direct sunlight should be used in at least one space per plaza.

Seating

- Well designed comfortable seating shall be provided.
- Dimensions, location and configuration shall maximize convenience and social interaction.
- Seating variety should include: movable seating, fixed benches, seat walls, fixed individual seating, planter ledges, seating steps.
- Ample public seating shall be provided, especially near significant nodes and intersections.
- A mixture of seating types should be included.
- Deterrents to seating such as rails and spikes are prohibited.

Architectural Character

- Each plaza shall contain at minimum one covered condition that protects pedestrians from the outdoor elements.
- The overall form should respond to the pedestrian traffic and movement patterns to maximize efficiency of space for the surrounding program.
- The construction method of all canopies, furniture elements, or infrastructure must minimize or eliminate any support columns.
- Each plaza and its components shall express the construction method and materials in a way to reveal and not conceal the tectonics.

Plaza Spatial Components

- Large open spaces shall be balanced with smaller defined areas to facilitate movement boundaries.
- Edges and a sense of enclosure should be defined by canopies, trees, and trellises.
- Plazas should be composed with a hierarchy of circulation pathways, social nodes, and design elements.
- Ample open space should be included to allow for flexible spatial arrangement and event scheduling, such as the Swap Meet or a similar artisan market.
- Areas along the paths may widen and narrow but should maintain a minimum width of 10'-0" at any point.
- Multiple entrances shall be provided from opposite and adjacent areas..
- The plaza shall closely tie into the concept of the respective phase it is located in through representing a distinctive design
- Any built infrastructure included should work with the spatial geometry and not appear forced.
- Connections from the plaza to surrounding public spaces or buildings should appear seamless without visual edge breaks.
- Landscaping should be used to define soft boundaries, such as seating areas, and provide pedestrian flow directionality.
- Landscaping should be used to guide pedestrians with directionality.
- Any obstructions such as seating or structural members should be avoided near prominent pathways.
- Co-locate with other public amenities such as buildings, shops, and restaurants.

Articulations / Details

- Symmetrical or asymmetrical articulations will create a harmonious composition.
- Planters or landscaped areas along the main circulation shall help to add variations to pathways.
- Fewer larger gestures should be used in lieu of multiple smaller gestures.
- Continuous elements across multiple plazas will help to create independent, but cohesive, design identities.
- Exposed structural members will create a repetitive element that gives human scale and creates boundaries.
- Details and ornamentation shall only be used if they are functional elements, contributing to views, or aiding the definition of implicit boundaries.
- The relationship between solid vs void will remain as permeable as possible to maintain an open environment.
- Any architectural element shall not block access to view corridors, cast excessive shade onto another space underneath, or create unfavorable wind conditions for site occupants.
- Trim elements will help contain edge conditions and terminate details
- Every edge should be articulated.
- Trash receptacles and bike racks shall be provided

Prohibitions

- Adjacent to garage entrances
- Loading docks
- Trash storage facility
- Exhaust vents
- Mechanical equipment
- Large opaque walls that impede visibility
- Barriers and fences

Materials / Color

- Accent colors and materials shall be used minimally
- Materials should reveal their true nature.
- Materials should be durable and anti-corrosive.
- The color shall reflect the respective phases scheme.
- Every face shall be articulated with proper colors and materials.
- Vegetation and planters as a color/ material should be used abundantly.
- Distinctive colors: (concrete, glass, white paint, metal panels, wood)
- Non slip pavers and drainage should be used and considered.

Public Parks

DESCRIPTION

As one of the primary outdoor gathering spaces for the site, the public parks will be critical elements for enhancing the overall pedestrian experience. The public parks serve as green space nodes that include pedestrian circulation and communal spaces within natural, or naturalized, spaces. Architectural elements, such as raised boardwalks or landscaped paths, may be included to enhance pedestrian accessibility and limit user impact while connecting nearby open spaces to the larger master plan as a whole. Each park shall be a mixture of occupiable and ornamental green space framed by architectural and ecological forms.

Railings and Barriers

- Park edges and boundaries may be more or less defined than other spaces
- Edges may be defined through material palette change or the addition of a barrier, such as a railing, seating element, or planting.
- Railings and barriers shall enhance visual transparency and not create conditions out of the public line of sight.
- Railings will all be treated similarly.
- Railings shall blend into the railings of other buildings at points of connection.
- Spatial barriers may not obscure visibility or line of sight among pedestrians, vehicles, cyclists, or retail storefronts.
- Elevated barriers and occupiable zones shall feature natural slope or otherwise accessible accommodations included within the design language.

PREDOMINANT FEATURES

Entry

- Entrance points into the park shall be seamlessly integrated into the surrounding buildings, roadways, and pedestrian spaces
- Park spaces shall serve as unifying nodes within the greater master plan
- Park spaces should serve as both place and threshold
- Be visible and easily accessible with frontage on streets
- Provide user comfort, safety, and accessibility
- Access from multiple points shall be provided

Plantings and Natural Elements

- Natural elements shall be included in each public space.
- Examples could include community gardens, water features, large decorative planters, or other landscaped elements.
- Native plants are heavily encouraged for the majority of landscaping.
- Site stormwater management elements, such as retention planters, bioswales, or community garden rainwater collection, are encouraged and should be incorporated into the overall design.
- Preserve existing trees and natural topography as much as possible

Seating

- Well designed comfortable seating shall be provided.
- Dimensions, location and configuration shall maximize convenience and social interaction.
- Shading should be provided above seating wherever allowable.
- Seating variety should include: movable seating, fixed benches, seat walls, fixed individual seating, planter ledges, seating steps.
- Ample public seating shall be provided, especially near significant nodes and intersections.
- A mixture of seating types should be included.
- Deterrents to seating such as rails and spikes are prohibited.

Architectural Character

- Each park may contain a covered condition that protects pedestrians from the outdoor elements.
- Parks may incorporate elevated boardwalks or other architectural pathways to limit user impact on natural topography
- The overall form of architectural elements should respond to the landscape and its natural elements or patterns; including plantings, stormwater flows, or topography.
- The construction method of all canopies, furniture elements, or infrastructure must minimize or eliminate any support columns.
- Each element and its components shall express the construction method and materials in a way to reveal and not conceal the tectonics.
- Enhance the site as a place for pedestrians
- Provide user comfort, safety, and accessibility.

Park Spatial Components

- Parks should be composed with a hierarchy of circulation pathways, social nodes, and design elements.
- A variety of green space should be included depending on the type or purpose of the park; occupiable open space, ornamental / educational gardens, or edible community gardens are all possible.
- Any built infrastructure included should work with the spatial geometry and not appear forced.
- Connections and relationships between the park and surrounding public spaces or buildings should appear natural without visual edge breaks or disturbances.
- Architectural elements should be incorporated into the landscape to guide movement and boundaries, such as seating areas, and provide pedestrian flow directionality.
- Where an adjacent space, bridge, or other element enters a park, landscaping should be used to guide pedestrians on or off the landing and lead them with directionality.
- Any obstructions such as seating or structural members should be avoided near these landing zones.
- Co-locate with other public amenities such as buildings, shops, and restaurants.
- Frame edges and provide overlooks

Articulations / Details

- Natural patterns and articulations will create a blend between the architectural and ecological elements of the site.
- Landscaped areas along the main circulation shall help to add variations to pathways.
- Fewer larger gestures should be used in lieu of multiple smaller gestures.
- Exposed structural members will create a repetitive element that gives human scale and creates boundaries.
- Details and ornamentation shall only be used if they are functional elements, contributing to views, or aiding the definition of implicit boundaries.
- The relationship between solid vs void will remain as permeable as possible to maintain an open environment.
- Any architectural element shall not block access to view corridors, cast excessive shade onto another space underneath, or create unfavorable wind conditions for site occupants.
- Trim elements will help contain edge conditions and terminate details
- Every face should be articulated.

Materials / Color

- Accent colors and materials shall be used minimally
- Materials should reveal their true nature.
- Materials should be durable and anti-corrosive.
- The color shall reflect the respective phases scheme.
- Every face shall be articulated with proper colors and materials.
- Vegetation and planters as a color/ material should be used abundantly.
- Distinctive colors: (concrete, glass, white paint, metal panels, wood)

Lighting and Visibility

DESCRIPTION

Site lighting shall be used for the purposes of maintaining pedestrian and site safety, wayfinding, and accessibility throughout all hours of the day or night. All lighting will be LED to conserve energy and reduce glare. As a residential neighborhood and community district, the site is always open to some degree, and proper site lighting is an important element to maintaining a positive user experience. With this in mind, a special consideration should be given to how the space and its users (and their needs) may change along the progression of a day or night.

Guidelines and Character

- There shall be a consistent, while varied, lighting character throughout the site.
- Walkways shall contain an included lighting element throughout the path that illuminates pedestrians to maximize safety and accessibility while minimizing excessive light pollution.
- Lighting assemblies must minimize or eliminate any excessive light spill effect on surrounding buildings, roadways, and natural spaces.
- Lighting assemblies shall express the construction method and materials in a way to reveal and not conceal the tectonics.
- All general site lighting shall consist of energy efficient and / or renewable energy-powered lighting systems, such as individual photo voltaic panels or wind turbines.
- Site lighting assemblies and placement shall focus on limiting light pollution on surrounding buildings, roadways, and natural spaces.
- Underlighting and indirect lighting systems are encouraged to maximize user visibility; this limits glare and contrast to create a more natural lighting environment.
- Concealing the light source, through architectural integration or the inclusion of an additional lighting shield, will create a more natural lighting environment.
- Fixture aesthetics should be designed to enhance the surrounding development.
- Lighting temperature may change to create experiences or delineate spaces

Plaza Lighting

- Plazas shall have a combination of overhead pole lighting and pedestrian scale bollard and cove lighting
- Each plaza will include a pedestrian Emergency call station with a distinctive light
- Lighting must consider day time, evening, and night time illumination
- Lighting must consider surrounding lighting for appropriate illumination
- Light fixture design should tell a story through references

Bridge Lighting

- Bridges shall have a combination of pedestrian level lighting elements mixed with overhead or cove conditions.
- Bridge lighting should try to conceal lighting elements as to not cause obstructions
- Fixtures should use trims and diffusers to block direct views of the light

Roadway Lighting

- Appropriate overhead lighting should maintain a visible roadway at all times
- Non-glare lighting fixtures should be used to minimize impact on drivers
- Crosswalks and woonerf streets near high-pedestrian traffic areas shall include human-scale lighting elements to maximize pedestrian awareness.
- Light pole aesthetics should consider the surrounding context.
- All city and county standards will apply unless a variance is provided.

Amphitheater Lighting

- Ground mounted landscape lighting fixtures should be used as accents
- Cove lighting should be used in areas where the path of travel needs lit but distractions are unwelcome
- Fixtures should be located and aimed in a way to minimize glare
- Fixtures should not obstruct view of the focal point

Pedestrian Pathway Lighting

- These walkways shall be lit by bollard type lighting or pole lighting if covering a larger area.
- These shall not obstruct the path of travel
- These fixtures should be located in such a way that their proximity to the path gives adequate illumination
- Ground mounted accent lights should highlight vegetation or ensign elements.

Materials / Color

- Accent colors and materials shall be used minimally
- Materials should reveal their true nature.
- Materials should be durable and anti-corrosive.
- The color shall reflect the respective phases scheme.
- A fixture color palette should be determined and remain consistent at least in each phase

Signage and Navigation

DESCRIPTION

All signage shall comply with city and state rules and regulations including the state Land Use Ordinance and outdoor advertising laws. The signage should also comply with the Aiea and Salt lake neighborhood signage standards as this property borders both.

These signage guidelines look at the design and placement of on site signage, aimed at setting consistency throughout the NASED site. The project will develop a unique design language for signage and will also take cues from local surrounding signage to ensure appropriate and contextual relationships are maintained. All signage shall have a commonality of materials, proportions, and typology that creates the NASED signage character.

General

- Hawaii has a long history of regulating size and placement of signs to limit visual distractions that protects the natural beauty of the state.
- Standards in relation to size, location, placement, motion, illumination, height, and setbacks must be followed.

Prohibited Signs

- Wind driven or portable signs
- Flashing signs
- Signs that constitute a traffic hazard due to size, location, movement, color, content, or illumination.
- Advertisements for activity not conducted on the premises.
- Aerial advertisements
- Signs on medians, light poles, trees, or within the right of way.
- Banners displayed longer than 7 days.
- Flyers placed on vertical surfaces
- Billboards

Signage Types

The specific design of these elements shall be determined at the time of installation based upon the location and type. The designs must be reviewed and approved before installation. In order to maintain consistency, all signs that portray a particular type should consider using similar materials and proportions. As this site is a new emertainment district (previously BMX-3) and may have specific special district rules and standards, specific heights and setbacks will not be quantified.

The sign types addressed here are

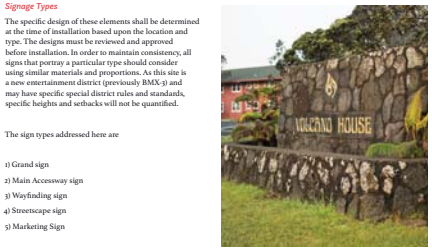
1) Grand sign

2) Main Accessway sign

3) Wayfinding sign

4) Streetscape sign

5) Marketing Sign



Grand Sign

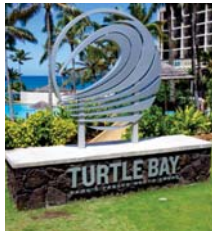
The purpose of the grand sign is to guide people to the development from off site as a means of wayfinding. This should be placed in a highly visible location such as near a prominent intersection that is recognized as being a part of the site from a distance. This sign type is important as it sets the image and quality of the overall development. This sign should take precautions to ensure it is not seen or treated as a billboard. The following are a list of design characteristics.

- The shape of the sign may follow the path of adjacent roadways
- The shape of the sign shall complement the overall geometry of the surrounding structures
- The sign shall not obstruct views of what is beyond or internal views outward.
- The name of the site (NASED) shall be the only identification
- Materiality should draw language from structures on site
- Foliage and landscaping should be an integral part of the composition
- Lettering may appear on both sides

Main Accessway Signs

The main accessway signs announce to occupants arriving that they are now entering the new aloha stadium entertainment district (NASED). These signs should appear at the entrance locations on Kamehameha Highway and Salt Lake boulevard. These signs should be incorporated into the streetscape and contain the following characteristics.

- Gateway entrance name
- District name
- Incorporation into existing intersection design language
- Constructed of materials that complement surrounding structures
- Do not block lines of sight
- Visually attractive and not obtrusive
- Appropriately scaled with proportions relating to contextual cues.



Wayfinding Signs

Wayfinding signage applies to vehicular and pedestrian traffic. The purpose of these signs are to direct people to their respective destinations on site, such as parks, hotels, residences, businesses, parking garages, stadium entrances, and drop off zones to name a few. The wayfinding signage may be seen at path entrances, street crossings, major plazas, parking garage exits, and gathering areas. This sign type is normally viewed while in motion, so the design should pay attention to the nature of the way the sign is read. Signs shall comply with the following characteristics.

- Typology shall be an easily readable font
- Vehicular and pedestrian wayfinding signage should be similar, but contain distinctive features for different viewing types.
- Wayfinding signs for vehicles should not obstruct pedestrian pathways or right of way.
- Wayfinding signs for pedestrians should be easily readable from a standard standing height.
- Profiles shall be kept slender to appear transparent from non viewing angles
- Materiality shall be durable and anti corrosive
- Materials should compliment surrounding context

Streetscape Signs

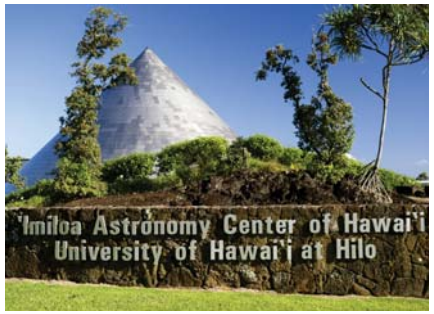
The streetscape signage shall be incorporated along major roadways, at intersections, at street crossings, in front of parking locations, and near areas of roadways subjected to changes in traffic patterns. Their purpose is to inform people of where they are currently and where they are going. The intent is that these signs blend into the surroundings so that they aren't visually intrusive, but allow people to gain knowledge on their surroundings. These signs should contain the following characteristics.

- Natural in appearance
- Thin and slender in profile
- Emphasize materiality over painted colors.
- Similar design language to street signage but distinctively different
- Incorporation with other contextual elements such as greenscape or street furniture over stand alone signage.

Marketing Signage

This type of signage refers to signs that advertise the name of the establishment such as retailers, restaurants, and offices. These signs are meant to signify the business and draw attention to their activity. These signs shall comply with the following characteristics.

- Do not obstruct the pedestrian line of sight.
- Unobtrusive to the overall architectural composition
- Placed above the entrance to the facility
- Do not hang or provide places for animal nesting
- Do not move or cause noise
- Have a common material and typology for all tenants per structure.
- Use a material and color palette that is complementary to the architectural design.



New Aloha Stadium Entertainment District

PROGRAMMATIC MASTER PLAN

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Appendix A-4:

WJE Existing Conditions Study

ALOHA STADIUM
Structural and Safety Evaluations:
Weathering Steel and Decking Corrosion Assessment

DAGS Job No. 12-10-0651
99-500 Salt Lake Boulevard
Halawa, Honolulu County, Hawaii

VOLUME 1 OF 2 VOLUMES

Final Report
December 12, 2018
WJE No. 2014.6720.1

Prepared for:
State of Hawaii, Department of Accounting and General Services, Public Works Division, Planning Branch

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ALOHA STADIUM
Structural and Safety Evaluations:
Weathering Steel and Decking Corrosion Assessment
DAGS Job No. 12-10-0651
99-500 Salt Lake Boulevard
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VOLUME 1 OF 2 VOLUMES

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WJE ENGINEERS ARCHITECTS MATERIALS SCIENTISTS

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WJE ENGINEERS ARCHITECTS MATERIALS SCIENTISTS

ALOHA STADIUM
Structural and Safety Evaluations: Weathering Steel and Decking Corrosion Assessment

DAGS Job No. 12-10-0651
99-500 Salt Lake Boulevard
Halawa, Honolulu County, Hawaii

EXECUTIVE SUMMARY

This report summarizes findings related to "Aloha Stadium - Structural and Safety Evaluations: Weathering Steel and Decking Corrosion Assessment" [DAGS Job No. 12-10-0651]. The primary objective of this project is to perform interim assessments related to structural safety evaluation while the State of Hawaii considers possible replacement of the existing stadium. This 2018 assessment is the second of an anticipated series of interim assessments; the first interim assessment was performed in early 2016, with findings presented in the report "Aloha Stadium - Structural and Safety Evaluations: Weathering Steel Corrosion Assessment," Final Report, October 26, 2016.

The present interim assessment is limited to two major safety-related aspects:

- An assessment of corrosion-related damage to weathering steel primary structural members in areas of the stadium where the original protective coating systems, installed in the 1980s and 1990s, have not yet been replaced or otherwise maintained in the recent health and safety improvement projects at the Aloha Stadium; and
- An assessment of corrosion-related damage to the lightweight concrete-and-metal decking systems, some of which were installed at the time of original stadium construction in the early 1970s, and some of which were installed in the 1980s and 1990s as replacements for original lightweight decking installed in the 1970s.

The findings from this 2018 interim assessment are used to prioritize recommended repairs. The steel seating tread-and-riser plates were surveyed under different projects, with the results of those surveys included in this report. Structural steel members that were recoated since 2007, composite concrete-and-metal decking installed since 2015, partitions, paneling, siding, stairs and stairwells, and other miscellaneous steel at the stadium were not included in the scope of this interim assessment.

The assessment methodology consisted of a visual survey that assigned a condition state to each structural steel member and lightweight floor decking panel, including a consideration of the structural connections related to the steel member or the bearing conditions of a lightweight decking panel, as follows:

- Condition State 1 (CS1) – No discernable coating failure on steel members or the visible surfaces of the lightweight decking; no corrosion is assumed. These members and decking panels pose no known immediate concern for health and safety of occupants of the structure.
- Condition State 2 (CS2) – Visual signs of localized coating failure with only minor surface corrosion on steel members or the visible surfaces of the lightweight decking. Section loss is assumed to not be appreciable. Health and safety implications of CS2 members include the eventual progression of observed deterioration into Condition State 3, and the potential for corrosion products and debonded coatings to displace from the surface of the steel member or the decking, becoming a nuisance and a relatively minor safety concern, to a lesser degree than for members classified as Condition State 3.
- Condition State 3 (CS3) – Visual signs of coating failure and noticeable corrosion on steel members or the visible surfaces of the lightweight decking. There appears to be notable corrosion-related section

losses in the steel member or the decking. Health and safety implications of CS3 members include corrosion products and debonded coatings that have the potential to displace from the surface of the steel member or decking, becoming a nuisance and a relatively minor safety concern.

- Condition State 4 (CS4) – Visual signs of coating failure on the steel member or the decking accompanied by pronounced corrosion of the steel member or the decking itself. Corrosion-related section loss in the steel member or decking is not only visibly apparent, but appears to be so pronounced that the structural performance of the steel member or its structural connections, or the decking or its support bearing conditions, is called into question.

Based on the observed condition state, expected levels of work to address identified concerns are as follows:

- Condition State 1 (CS1) – Remediation of concerns with steel members classified as CS1 involves an application of maintenance overcoats onto the topcoats of the corrosion mitigation coatings within the window of maintenance overcoating feasibility, estimated to be 10-15 years from the application of the corrosion mitigation coatings that are in place. The undersides of the lightweight decking system panels that are classified as CS1 should be recoated with corrosion mitigation coatings and the pedestrian traffic coatings on the concrete walking surface should be replaced, along with repairs to the concrete substrate; however, in lieu of maintenance-type repairs, it may be more cost-effective over the long term to replace the lightweight decking system with a thicker, conventional composite metal decking system.
- Condition State 2 (CS2) – Remediation of concerns with steel members classified as CS2 involves entire removal of existing protective coating systems and installation of new corrosion mitigation protective coating systems. Areas of lightweight decking system classified as CS2 should be replaced with a thicker, conventional composite metal decking system.
- Condition State 3 (CS3) – Remediation of concerns with steel members classified as CS3 involves complete removal of existing protective coating systems and installation of new corrosion mitigation protective coating systems. High priority CS3 steel members have active corrosion concerns that should be considered for mitigation in the near-term, but not necessarily needing intervention in the next 24 months. Similarly, high-priority areas of metal decking classified as CS3 should be replaced with a thicker, conventional composite metal decking system in the near-term, but not necessarily needing intervention in the next 24 months.
- Condition State 4 (CS4) – Remediation of concerns with steel members classified as CS4 requires structural modifications to strengthen affected components of the member or to eliminate construction details that inadvertently result in accelerated corrosion. CS4 steel members identified as “Immediate” priority have concerns over structural performance that should be addressed immediately; and CS4 steel members identified as “24 month” priority have concerns over structural performance that should be addressed within 24 months. High-priority areas of metal decking classified as CS4 should be replaced with a thicker, conventional composite metal decking system within the next 24 months.

Repairs are recommended to be undertaken for the corrosion related issues summarized in Table 1, which is generally organized by groups of members as described in Appendix A, and further subdivided by condition state. The current status of the repairs that were previously-recommended for repair in our 2016 corrosion assessment report is summarized in Table 2; incomplete repairs and unaddressed items in Table 2 continue to be recommended for repair. For groups where the configuration of all members and their connections within the group are identical, or nearly identical, the entire group is assigned the most severe condition state.

Suggested time frames are provided under “Priority”, which relates to the observed condition state; the indicated time frames are relative to the inspection date of August 2018. Repairs to CS4 members, connections, and decking are urgent and are recommended to be completed within, at most, 24 months from the inspection date of August 2018.

Due to their criticality to continued structurally-safe operations of the existing stadium, particular members classified as CS4 are identified to be repaired immediately. If these repairs cannot commence immediately, the members identified for immediate repair should be monitored for on-going deterioration during the delay period; the delay period should not exceed 1 year. The intent of the monitoring would be to generally assess that the stadium can be occupied for continued operations during the delay period. The nature of the monitoring program, and the frequency of monitoring, remain to be developed.

The timing of repairs to CS3 High Priority and CS2 Medium Priority members, connections, and decking will be contingent on planning and funding decisions pertaining to the facility. It is advisable to consider undertaking projects to address all of these items as soon as practical, to mitigate the adverse effects of corrosion that is progressing at an accelerating rate with time (Page 33).

The 2018 survey revealed noticeable corrosion-related losses, classified as CS4, in particularly critical groups of structural members in the stadium. More detailed assessments, including physical measurements of section losses and detailed investigations, are recommended for these particularly critical members as described later in this report (Page 38).

In addition to the repairs of deteriorating steel members, metal decking, and connections, a one-year interval between inspections is recommended (Page 38). The round of inspections summarized in this report were performed during July and August 2018. Therefore, the next recommended inspection date is August 2019. Future recurring inspections should take place on an annual basis.

At the time that the recommended 2019 inspection is anticipated to be performed, the renewed protective coating systems that were installed under construction contracts completed in 2009 through 2011 will have been in service for an average of 10 years. It is therefore recommended that weathering steel members which received coatings under construction contracts that were completed prior to and in 2011 be included in the 2019 inspections.

Table 1. Summary of Recommended Repairs - 2018 Assessment

Priority (Relative to August 2018)	2018 Condition State	Group (App. A)	Group Description (2018 Assessment) (Consult Appendix A for further information)	Group Status
Immediate	CS4	02	Pronounced section losses at flanges and web at base of inclined bracing member in endzone stands at concrete barriers along Grid Line F.9	Pending
		N/A	Severe corrosion at multiple locations in the roof structure over pedestrian entry Gate 1 (refer to summary memo in Appendix B)	Pending
24 Month	CS4	01	Pronounced section loss in top flanges of beams in the cantilevered raker assemblies supporting Red (lower tier) and Brown (loge) Seats	Pending
		04	Pronounced section loss in web of radial truss bottom chord at plate connection to horizontal truss diagonal member; or bolt head or nut lost to corrosion at the connection; or both	Pending
		06	Severe corrosion of sub-decking hat channels, at lower concourse restroom plumbing	Pending
		06	Severe corrosion of sub-decking hat channels, at locations on lower concourse and upper concourse, away from bathrooms	Pending
		10	Some section losses at wide-flange girders that frame out escalator openings, at both escalators	Pending
		11	Section losses within connection of wind girt to radial truss bottom chord member	Pending
		Several	Pronounced section losses at flanges of various spandrel and edge beams, throughout stadium	Pending
		N/A	Severe corrosion at multiple locations in the roof structures over pedestrian entry Gates 5, 6, 7, 8 (refer to summary memo in Appendix B)	Pending
Medium	CS3	06	Limited section losses in sub-decking hat channels or in decking itself, at scattered across all seating stands	Pending
		10	Some section losses at top flanges of beams that frame out the field-level floor landings at the bottom of the escalators, at both escalators	Pending
		Several	Some section losses at flanges, webs, or connections at various beams, at locations scattered across all seating stands	Pending
		N/A	Severe corrosion at multiple locations in the sheet metal cladding and roofing for the structures over vehicular entry Gates 1, 2, 3, 4 (refer to summary memo in Appendix B)	Pending
	CS2	N/A	Moderate corrosion of the structural steel framing of the roof structures over vehicular entry Gates 1, 2, 3, 4 (refer to summary memo in Appendix B)	Pending

Table 2. Updated Summary of Previously-Recommended Recommended Repairs - 2016 Assessment

Updated Priority (Relative to August 2018)	2016 Condition State	Group (App. A)	Group Description (2016 Assessment) (Consult Appendix A for further information)	Group Status
Immediate	CS4	03	Connections between girder and raker column, Line F at top of Blue seating section	Pending: Anticipated for H&S5
		05	Fiberglass angle falling hazard mitigation, longer term	Pending: Anticipated for H&S5
		06	Floor deck short-term stabilization beneath a vomitory ramp	Pending: Anticipated for H&S5
	CS3	09	10 Selected Rows of Seating Plate Repairs, various Orange seating rows in NWSL	Pending: Anticipated for H&S5
Completed	CS4	05	Fiberglass angle falling hazard mitigation, short term	Performed In-House by Stadium
		06	Electrical Room Lightweight Decking Floor Slab short-term Stabilization	Included in H&S4
		09	59 Selected Rows of Seating Plate Repairs, various Orange and Yellow seating rows; also all aisles with step boxes	Included in H&S4
High	CS3	09	Seating Plate Repairs, all remaining Orange seating rows for both sideline stands and all remaining northeast sideline stand Yellow seating rows not addressed in H&S4 and H&S5	Pending
		Various	Corrosion mitigation at CS3 members identified in Appendix C of the October 26, 2016 corrosion assessment report.	Pending
Medium	CS2	09	Seating Plate Repairs, all Brown (loge) seating rows, northeast sideline stand Red seating rows, and north endzone Red seating rows in Sections U, V, UU, and VV	Pending
		N/A	Corrosion mitigation at CS2 members (all remaining members and connections that are presently painted brown)	Pending

INTRODUCTION

The Planning Branch of the Public Works Division (PWD) of the Department of Accounting and General Services (DAGS), State of Hawaii, requested that Wiss, Janney, Elstner Associates, Inc. (WJE) perform a limited study regarding corrosion of weathering steel members and floor slab lightweight decking systems at Aloha Stadium. The intent of this study is primarily to identify and prioritize recommended repairs of these aspects of the Aloha Stadium to maintain health and safety.

BACKGROUND

Description of Stadium

The Aloha Stadium (Figure 1) is comprised of six structurally independent seating stand modules. These seating stand modules are referred to under the following titles and abbreviations in the present report:

- North Endzone (NEZ) (formerly identified as North Fixed)
- South Endzone (SEZ) (formerly identified as South Fixed)
- Northeast Sideline (NESL) (formerly identified as Northeast Moveable)
- Southeast Sideline (SESL) (formerly identified as Southeast Moveable)
- Northwest Sideline (NWSL) (formerly identified as Northwest Moveable)
- Southwest Sideline(SWSL) (formerly identified as Southwest Moveable)

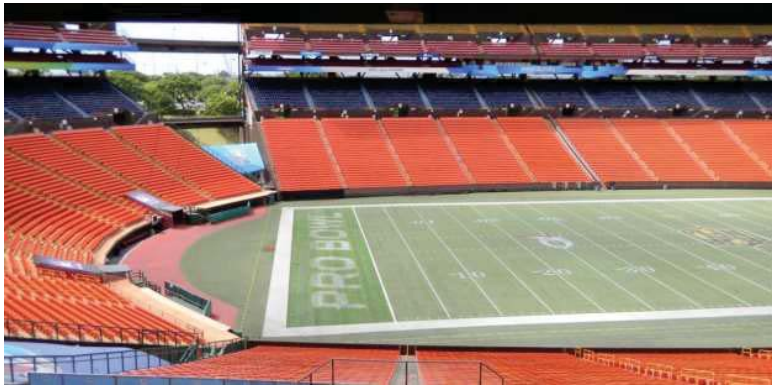


Figure 1. Aloha Stadium, as viewed from a vantage point on Gridline 17 in the Blue seating section on the southeast sideline seating stand. The south endzone seating stand is on the left side, southwest and northwest sideline seating stands are visible across the field, and the southeast sideline seating stand is in the foreground.

The seating stand modules have previously been referred to as moveable or fixed, referring to the historical capability to relocate the sideline modules between baseball and football configurations. However, based on findings from our 2005 planning study, a policy decision was made by the Aloha Stadium Authority to no longer host baseball events. Consequently, the stadium now remains in the football configuration.

The structural and architectural plans for the stadium utilize numbered gridlines in a radial pattern aligned with the raker frames and lettered gridlines oriented parallel to the edges of the field (Figure 2). These gridline identifiers were established on the original design documents for Aloha Stadium.

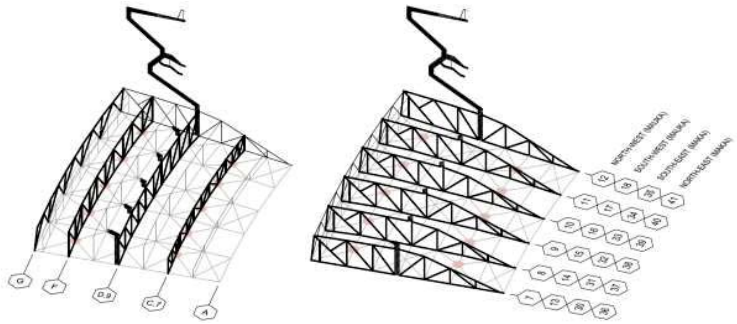


Figure 2. Schematic illustrations of the base truss system, located beneath the sideline seating stands, showing trusses along lettered transverse gridlines (left) separately from trusses along numbered radial gridlines (right).

Because of their prominence at the stadium, seating section identification letters are used to reference many features at the stadium, Figure 3. Each lettered seating section spans between numbered radial gridlines. The seating sections on the west half of the stadium are identified with single letters. Seating sections on the east side of the stadium are identified with double letters, corresponding to the single-lettered sections on the opposite side of the north-south line of symmetry.

Each of the structurally independent stand modules extend from ground level up to a high roof structure that is cantilevered over the yellow seating sections, Figure 4. Seating sections are differentiated vertically by colors, from lowest level (Field Level) proceeding upwards:

- Orange (Lower Field Level)
- Blue (Upper Field Level)
- Brown (Loge Seats or Box Seats)
- Red (Lower Tier Level)
- Yellow (Upper Tier Level)

The seating sections are step-like, tread-and-riser systems that form a seating bowl. Typically the seating sections are constructed of 1/4-inch steel plate tread-and-risers, with the exception of the Orange seating level at the endzones, which utilize a reinforced concrete tread-and-riser construction. The framing that supports the tread-and-riser is typically structural steel, with the exception of the lowest level of the endzone stands, where the reinforced concrete tread-and-risers are supported by reinforced concrete framing.

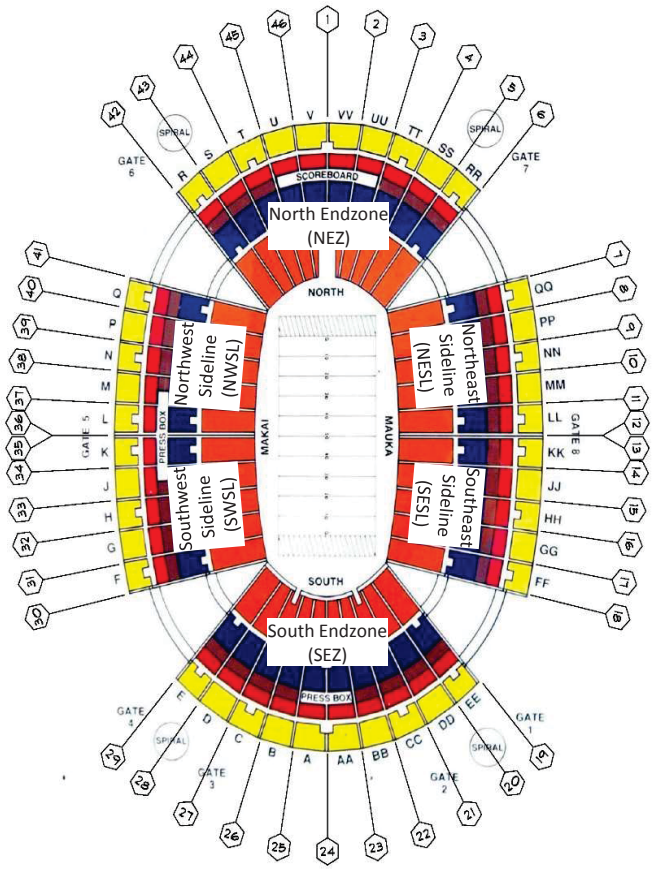


Figure 3. Exploded (colored sections not vertically stacked) plan view of the Aloha Stadium, indicating seating section letter identifiers and radial gridline numbering scheme.

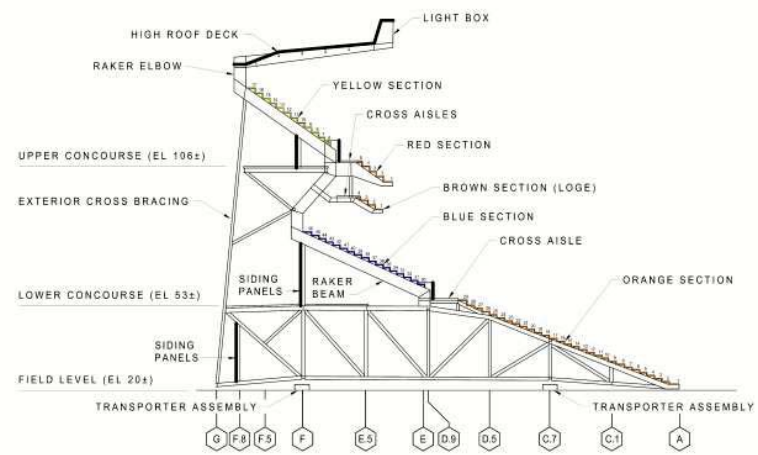


Figure 4. Schematic section through Aloha Stadium sideline seating stand structure.

Access to the seating sections is accomplished via two main concourses. The lower concourse is located approximately at the elevation of the top of the Orange seats, providing access to the Orange and Blue seating sections. The upper concourse is located at the top of the Red seating level, providing access to the Brown, Red, and Yellow seating sections. The structural floor slab systems that support the two concourse levels and other horizontal traffic bearing surfaces, such as the cross-aisles and vomitory ramps, are typically constructed of concrete material of various construction detailing. The various floor slab systems will be described in detail in a later section of this report.

Four spiral ramp structures exist to provide pedestrian access to the upper concourse level from the lower concourse level. The original spiral ramp structures, which had been constructed using weathering steel, were replaced in their entirety with hot dipped galvanized and painted mild steel framing in the 1990s.

Corrosion Mitigation Coatings

The primary structural systems at the Aloha Stadium are constructed using weathering steel, which requires a protective coating system (high-performance paint) to prevent corrosion in the chloride-laden, Hawaiian environmental conditions. As originally constructed during the early 1970s, the weathering steel at the stadium was uncoated. However, by 1980, significant corrosion developed in primary structural members throughout the stadium, causing concern for the integrity of the structure.

A corrosion mitigation program was developed during the 1980s, and a protective coating system was applied to the weathering steel throughout the stadium structure during an approximately 10- to 12-year long period between the mid-1980s and 1995. The protective coating system applied in this time period is

comprised of three parts: an organic zinc-rich primer, an epoxy intermediate coat, and an aliphatic urethane topcoat.

Since originally applied, no major maintenance of the coating system is known to have taken place prior to corrosion mitigation efforts that commenced in 2009. At the present time, corrosion mitigation remains ongoing, with the circa 1980s-1990s protective coatings in some areas of the stadium having aged beyond 30 years.

Prior Condition Survey of Existing Coating Systems

As part of Phase 2 of Structural Certification, a comprehensive field examination of the protective coating systems of Aloha Stadium was conducted by WJE during the fall of 2007. Over 1,100 individual field tests were performed on the existing coating systems at over 220 discrete locations throughout Aloha Stadium. An analysis was performed on the collected data. Information regarding the condition study and recommendations can be found in the report Aloha Stadium, Structural Certification Task 2.2, Condition Survey of Protective Coatings, Final Task Report, October 31, 2008, WJE No. 2007.4596.2 [DAGS Job No. 12-10-0374].

The conditions of the coating systems were tested or rated in accordance with accepted standards for adhesion, thickness, degree of corrosion present, degree of corrosion undercutting, and the degree of chalking. Other coating defects such as peeling, blistering, and cracking were visually evaluated along with additional coating related concerns such as limited resistance to water ponding, erosion of coatings, pinholes in coatings, and questionable coatings selected for maintenance painting. Samples of coatings were removed from selected stadium surfaces and tested in the laboratory for identification of the coatings' generic binder and for the presence of hazardous metals content. The results of the field and laboratory tests were analyzed, and field observations were assessed. It was generally found that the ageing coatings were experiencing localized failure at various locations throughout the entire stadium and were reaching the end of their serviceable life, if not beyond serviceability.

An Overcoating Acceptance Criteria was developed on the basis of commonly-accepted industry practices for acceptable levels of adhesion, thickness, and degree of corrosion in combination with our own experience with coating systems and exercise of our professional judgment. When the Overcoating Acceptance Criteria was applied to the field test results, it was found that the coatings of a significant portion of the coated components at Aloha Stadium were not suitable for overcoating. At the time of the study in 2007-2008, all of the existing protective coatings at Aloha Stadium had aged more than 10 years, and some had been in service for 20 or more years. The field testing revealed that deterioration of the coatings, as measured by adhesion testing, was increasing with age (Figure 5). For the generic type of existing coating system, original degree of surface preparation, and the given environment, industry references for service life indicated 10 years to be the ideal age at which to apply a maintenance overcoat to the generic type of existing coating system utilized at the stadium, and that practical service life was fully exhausted at 16 years.

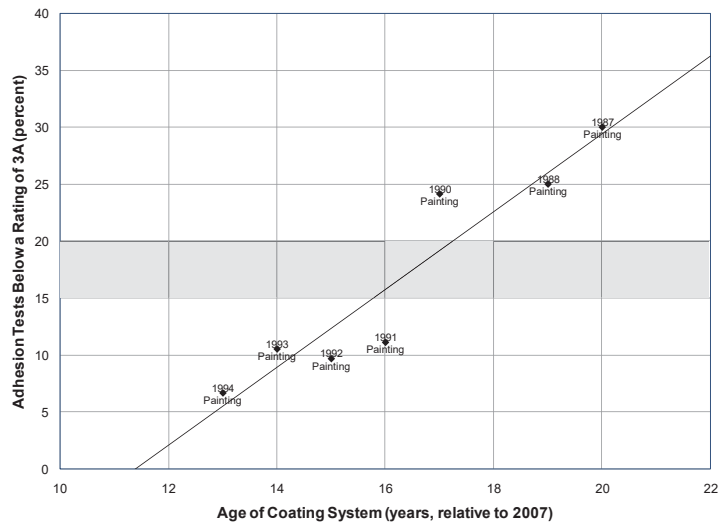


Figure 5. Age of the coating system (relative to 2007) versus the proportion of low adhesion results determined for certain members tested in 2007. The linear trend line of the plotted data is shown. The shaded band in the range of 15 to 20 percent of adhesion tests having poor ratings represents the starting point where any economic benefit that may be realized by overcoating may be offset by costs of surface preparation. Since the time that this data plot was prepared in 2007, the coatings applied during 1991 to 1994 have reached ages of at least 24 years(as of 2018) and older, suggesting that adhesion test results on these coatings would likely fall above the shaded band if these coatings were retested at this current age.

Application of the Overcoating Acceptance Criteria identified a limited proportion of components at the stadium, at the time of the 2007-2008 condition survey, which were marginally eligible for overcoating. Even though some initial construction cost benefit may have been realized by judiciously overcoating these components as compared to repainting, the economic benefit was not certain over long-term life cycle financial analysis, given the deteriorated coating conditions and the difficult access to many of the steel components for future maintenance and repairs. This is because overcoating of these components will come with a reduced service life as compared to the service life of a repainted component where existing coatings are removed and new coatings are applied. In addition, a higher risk of failure of the overcoat was anticipated where existing coatings in their 2007-2008 condition would be overcoated without regard to the presence and proportion of coatings with poor adhesion. Furthermore, it was unlikely that coating manufacturers would provide a long-term warranty, if any warranty at all, for the overcoating application even if areas of poor adhesion were to be addressed.

At the time of the 2007-2008 condition survey, WJE provided options to selectively remove areas of poorly adherent existing coating to reduce the risk of failure of an overcoat, or to otherwise remove and replace the existing coating systems. For the overcoating option, investigative trial installations and assessment would be required to demonstrate whether an overcoated system could achieve a reasonable performance. The factors related to overcoating supported the State's decision at that time to completely remove and replace the existing coatings and forgo investigative trial installations related to the overcoating approach.

Recoating as Part of Corrosion Mitigation

On this basis, the State of Hawaii began a phased program for renewal of the protective coatings system over a series of construction projects, commencing in 2009, and continuing to the present. The renewal program consists of complete removal of the original coating system and replacement with a new coating system.

Based on the results of the field survey testing, and with no provision made to pursue options for overcoat trial installations, it was recommended that the stadium should be recoated. Recoating is defined here as the complete removal of any existing protective coating system to bare metal followed by application of a new protective coating system. Various projects at Aloha Stadium, completed to date since 2009 and including current projects (H&S4, nearing final acceptance, and H&S5, pending award), have included removal of existing protective coatings and installation of new protective coatings as part of corrosion mitigation of structural steel at the Aloha Stadium. The replacement protective coating system applied commencing in 2009 is comprised of three parts: an organic zinc-rich primer, an epoxy intermediate coat, and fluoropolymer topcoat.

The protective coatings have been renewed in several critical areas of the stadium, including:

- The main high roof and its supporting cantilever columns, throughout the stadium
- The diagonal bracing frame (at the rear of the seating stands), and the hub assemblies within this bracing, throughout the stadium
- Inclined braces between bracing frame hubs and raker frame knee joints, on sideline seating stands
- Main stairs on sideline stands
- Framing in direct contact with new, replacement lower (main) level concourse decking, northeast and northwest sidelines

The scope of recoating corrosion mitigation is described generally for each project in the following itemization; for specific locations of demising lines between the various projects, the individual project documents should be reviewed. Projects completed since 2009 to date, and projects that are currently active, are listed below:

Roof Replacement Projects
The corrosion mitigation work, including both recoating and repairs to or replacement of structural steel members, was performed at the main high roof cantilever beams, girders, purlins and light-box framing.

- Roof Phase 1: ["Aloha Stadium, Replace Metal Roof Deck and Transformers (Sections FF to KK and RR to VV) DAGS Job No: 12-10-0518] - Completed 2009
- Roof Phase 2: ["Aloha Stadium, Replace Metal Roof Deck and Transformers (Sections LL TO QQ, R & S, & L TO Q) DAGS Job No: 12-10-0598] - Completed 2010
- Roof Phase 3: ["Aloha Stadium, Replace Metal Roof Deck and Transformers (Sections AA TO EE, & A TO K) DAGS Job No 12-10-0620] - Completed 2011

Structural and Various Health and Safety (H&S) Improvements
The corrosion mitigation work, including both recoating and repairs to or replacement of structural steel members, was performed.

- H&S Phase 1 (H&S1): [DAGS Job No. 12-10-0605] - Exterior cross bracing, from ground to roof, all stands - Completed 2013
- H&S Phase 2 (H&S2): [DAGS Job No. 12-10-0636] - North Concourse Waterproofing - No corrosion mitigation work - Completed 2013
- H&S Phase 3 (H&S3): [DAGS Job No. 12-10-0736] - Bracing between upper and lower concourse (sidelines), coating of areas below the lower concourse directly affected by structural upgrades - completed 2016
- H&S Phase 4 (H&S4): [DAGS Job No. 12-10-0797] - Primarily seating plate corrosion mitigation work and isolated corrosion mitigation on structural members, connections, and decking - currently constructed and nearing final acceptance
- H&S Phase 5 (H&S5): [DAGS Job No. 12-10-0865] Primarily seating plate corrosion mitigation work and isolated corrosion mitigation on structural members, connections, and decking - currently pending award

Areas of Stadium not yet Recoated

However, the original coatings systems have not yet been replaced in significant areas of the stadium, including:

- The structural base truss systems that support all four sideline seating stand structures: northwest, southwest, southeast and northeast sideline stands
- The seating plates that support the Orange, Blue, Brown, Red and Yellow seating areas, throughout the entire stadium
- The girts and struts that support the cladding that enclose the base trusses of all four sideline seating structures
- Inclined braces between bracing frame hubs and raker frame knee joints on both end zone seating stands
- Raker frame members in all areas of the stadium
- Structural steel framing directly supporting all upper level concourses
- Structural steel framing directly supporting the lower (main) level concourses at the southeast and southwest sideline stands
- All curved pedestrian passage bridge structures
- Elevator tower structure and bridges to the main stadium structure
- Spiral ramp structures and bridges to the main stadium structure

Lightweight Metal Decking Floor Slabs

Both levels of concourse slabs and other horizontal traffic-bearing surfaces, such as the cross-aisles at the tops of the Orange, Brown and Red seating areas, the slabs supporting the concession stands and restrooms, and the slabs of the vomitory ramps, are typically constructed of concrete materials with metal decking substrates of various construction detailing.

At both of the endzone seating stands, the slabs of lower concourse, the concession and bathroom areas that adjoin the lower concourse, and concourse vomitory ramps, and the cross aisle at the top of the Orange seating area are comprised of reinforced-concrete slabs supported by reinforced-concrete framing systems.

For all of the remaining areas of the Aloha Stadium seating stands, the original, circa 1970s floor slabs were constructed using a unique system of light-gage hat channels ("sub-decking") supporting a light-gage, galvanized, corrugated metal deck ("decking") topped by a thin concrete slab that is nominally 1 inch thick including the depths of the flutes of the corrugated metal deck and the concrete (Figure 6), collectively identified as a "lightweight decking system." The durability of this circa 1970s lightweight decking system was poor, and as a result, after less than 6 years of service life, the circa 1970s lightweight decking components were replaced with a nearly-identical lightweight decking system that also used galvanized steel components, with the further addition that a waterproof traffic coating was applied to the walking surface of the thin concrete slab to improve the durability of the replacement system components. Replacement of the circa 1970s lightweight decking system commenced in 1981, taking place in phases over the course of the 1980s.

Re-Decking with Conventional Decking System as Part of Corrosion Mitigation

Even with the addition of a waterproof traffic coating to the walking surface, the service life of the circa 1980s replacement lightweight decking system proved to be on the order of 20 to 25 years. This means that in many areas of the stadium, the circa 1980s replacement lightweight decking system is nearing the end of its service life.

Therefore, some limited re-replacement of the circa 1980s replacement lightweight decking system occurred in 2015, at selected areas of the northeast and northwest sideline seating stands. The circa 1980s lightweight decking system was replaced with a more conventional composite concrete-and-metal deck system (Figure 7), including application of a waterproof traffic coating to the walking surface. This re-replacement decking system is anticipated to have improved durability and longevity as compared to the existing lightweight deck system, even though the conventional composite deck system will have a larger self-weight.

The installation of the conventional decking system was completed under the following construction project:

- Aloha Stadium, Structural and Various Health and Safety Improvements, Phase 3 [DAGS Job No. 12-10-0736] - Completed 2016

The specific areas where conventional decking system has been installed include:

- NESL, at the rear of the lower concourse level, from the line of columns along Grid Line F to the outside edge of the concourse slab at Grid Line G;
- NESL, the cross aisle at the top of the Orange seating section;
- NWSL, at the rear of the lower concourse level, from the line of columns along Grid Line F to the outside edge of the concourse slab at Grid Line G; and
- NWSL, the cross aisle at the top of the Orange seating section;

The H&S4 and H&S5 projects do not include any large areas where conventional decking was installed, although H&S5 is anticipated to include installation of replacement conventional decking at relatively limited areas of the cross aisles at the top of the Orange seating sections of the southeast and southwest sideline seating stands. Instead, for the most part, the H&S4 and H&S5 projects provide supplemental support to selected, deteriorated areas of the existing lightweight decking rather than replacement of the deteriorated lightweight decking. The supplemental support should be considered an interim measure, intended to stabilize the deteriorated lightweight decking until such time as conventional decking can be installed in the affected area.

Areas of Stadium not yet Re-Decked

General locations in the stadium where the lightweight decking systems remain in place include the following:

- Upper concourse walkways and vomitory passages, all seating stands throughout the stadium
- Cross aisles at the top of the Red seating section, all seating stands throughout the stadium
- Cross aisles at the top of the Brown (loge) seating section, all seating stands throughout the stadium
- Cross aisles at the top of the Orange seating section, SESL and SWSL
- Lower concourse concession, restroom, and back-of-house areas, along with vomitory passages, all sideline seating stands
- Lower concourse outer walkways, SESL and SWSL

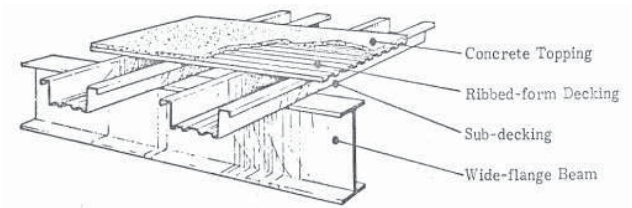


Figure 6. Schematic illustration of existing lightweight decking system at Aloha Stadium.

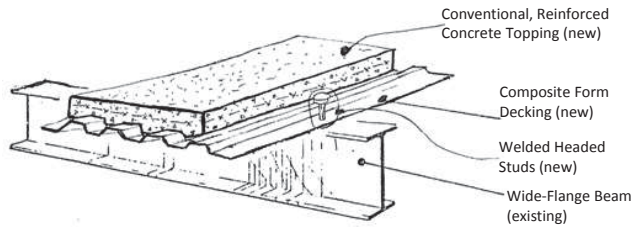


Figure 7. Schematic illustration of circa 2015 replacement decking system at Aloha Stadium.

CORROSION ASSESSMENT METHODOLOGY

Basis for Corrosion Assessment Work

WJE has been informed by DAGS that evaluation for construction of a separate new stadium to replace the existing Aloha Stadium is in progress. Therefore, maintaining health and safety at the existing stadium should recognize the possibility for replacement of the stadium. Such maintenance should be anticipated over an estimated eight-year period while a new stadium is funded, designed, and constructed. The anticipated eight-year duration commences from the time that a firm decision is made by the State to pursue construction of a new stadium.

A plan of action was discussed in 2016 with DAGS to perform structural safety inspections and evaluations modeled on similar inspections that are performed on highway bridge structures. Safety inspection and evaluation only considers the effect of dead and live loading; lateral loading effects (wind, earthquake) and effects of occupant-induced vibrations are not considered. The corrosion assessment reported herein includes not only safety inspections, but also collects condition information about coatings, structural members, and floor slab metal decking; this condition information can be used to identify structural steel members and areas of floor slab decking having conditions in need of attention, and to prioritize the necessary work related to these members and decking.

Structural Members and Floor Slabs Selected for Inspection and Evaluation

Weathering Steel Members with Protective Coatings

Our efforts related to safety inspection and evaluation focus on those areas of the existing stadium where the original protective coatings system installed circa 1980s and 1990s have not yet been replaced. These members received a brown top coat or did not receive any top coat, leaving the white epoxy intermediate coat visible. Members where the original protective coating systems have been removed and replaced are not in the present safety assessment because these protective coatings were recently installed and are presumably performing well. A green top coat has been applied to members that received a new coating system, allowing these members to be readily-distinguished from members that still have the original brown or white protective coating system in place. The first of the replacement coatings were installed in 2009, and are nearing 10 years of service life at the time that this report is written.

There is an ongoing concern that the original protective coatings may have completely failed in some locations, thereby exposing the underlying structural members to the possibility of renewed corrosion. Consequently, those portions of members where we believe that the original protective coatings have failed are selected for assessment whether further corrosion damage has occurred, in addition to the corrosion damage that occurred prior to application of the original coatings in the 1980s and 1990s.

The base truss systems beneath the four sideline seating stand structural modules represent one-third to one-half of the total number of weathering steel members in the entire stadium. Additionally, these base truss members support more than one-half of the total number of seats in the stadium. Given that the original coatings on these base truss members have not yet been replaced, and that these are the oldest of the original protective coatings applied, these members were selected for assessment under the present safety inspection and evaluation efforts.

Other structural members where the original protective coating system has not yet been replaced and were therefore selected for assessment in this project consisted of the mainframe welded plate girders that

comprise the raker frames which support the Blue, Brown, Red and Yellow seating areas, and the framing members that connect the raker frames to the diagonal bracing frames at the rear of the stadium.

Lightweight Metal Decking Floor Slabs

A visual survey of the underside of the original lightweight decking systems that are older than 5-years are selected for assessment in this project. General locations in the stadium where the lightweight decking systems remain in place were summarized earlier in this report.

Areas in the stadium where the lightweight decking system have been replaced by a conventional composite metal decking system during the H&S3 project are not expected to exhibit deterioration at this time, and as a result, spans of conventional composite metal decking are not included in the present assessment.

Other Structural Features

Portal structures constructed from structural steel and sheet metal of uncertain date of construction exist at the vehicular entry gates that lead into the Aloha Stadium site. The vehicular entry gate structures have not been surveyed for corrosion in any recent survey or repair efforts. Therefore, the vehicular entry gate portal structures are selected for assessment.

Similarly, canopy structures constructed from structural steel and sheet metal of uncertain date of construction exist at several of the pedestrian entry gates that lead into the main concourse at the rear of the Aloha Stadium. The pedestrian entry gate structures have not been surveyed for corrosion in any recent survey or repair efforts. Therefore, those pedestrian entry canopy structures that are constructed of structural steel and sheet metal are selected for assessment. Some pedestrian entry canopy structures are constructed of reinforced concrete; the concrete canopy structures are not included in the present assessment.

Because the current spiral ramp structures are replacement structures constructed in the 1990s using galvanized mild steel, maintenance of corrosion protection for the ramp structures is a lower priority. As a result, the spiral ramp structures are not included in the present assessment.

The lower portions of both endzone seating stands (the lower concourse floor slab, the Orange seating areas, and the structures supporting these areas) are constructed of reinforced concrete structural systems. As a result, these lower portions of the North and South Endzone seating stands are not included in the present assessment.

Survey Methodology

The primary methodology used was visual assessment of the selected weathering steel members and lightweight floor decking as summarized above. Due to access limitations and obstructions, it was not possible to observe all surfaces of every structural steel member with original coatings from the 1980s and 1990s, or every panel of lightweight floor decking. It is estimated that less than 20 percent, cumulatively, of the surfaces of the structural steel members with original coatings that were assessed in this survey were concealed or inaccessible. For the lightweight decking, it is estimated that less than 10 percent of the lightweight decking panels were concealed or inaccessible.

The visual survey assigned a condition state to each member and decking panel, as follows:

- Condition State 1 (CS1) – No discernable coating failure on steel members (Figure 8) or the visible surfaces of the sub-decking hat channels or the decking itself; therefore, no corrosion is assumed. These members and decking panels pose no known immediate concern for health and safety of occupants of the structure.
- Condition State 2 (CS2) – Visual signs of localized coating failure with only minor surface corrosion on steel members (Figure 9) or paint loss with corrosion observed or corrosion likely on the visible surfaces of the sub-decking hat channels or the decking itself. Section loss is assumed to not be appreciable. Health and safety implications of CS2 members include the eventual progression of observed deterioration into Condition State 3, and the potential for corrosion products and debonded coatings to displace from the surface of the member or the decking, becoming a nuisance and a relatively minor safety concern, to a lesser degree than for members or decking classified as Condition State 3.
- Condition State 3 (CS3) – Visual signs of coating failure and noticeable corrosion on steel members (Figure 10) or the visible surfaces of the sub-decking hat channels or the decking itself (Figure 11). There appear to be notable corrosion-related section losses in the steel member or decking. Health and safety implications of CS3 members include corrosion products and debonded coatings that have the potential to displace from the surface of the member or decking, becoming a nuisance and a relatively minor safety concern.
- Condition State 4 (CS4) – Visual signs of coating failure on the steel member (Figure 12, Figure 13), sub-decking or decking (Figure 14), accompanied by pronounced corrosion of the member, sub-decking or decking itself. Corrosion-related section loss in the member, sub-decking, or decking is not only visibly apparent, but appears to be so pronounced that the structural performance of the member, its structural connections, sub-decking or decking, or the bearing supports for the decking, is called into question.

Figure 8. Examples of structural steel members classified as Condition State 1

Figure 9. Example of structural steel member classified as Condition State 2

Figure 10. Example of structural steel member classified as Condition State 3.

Figure 11. Example of lightweight floor slab decking classified as Condition State 3.

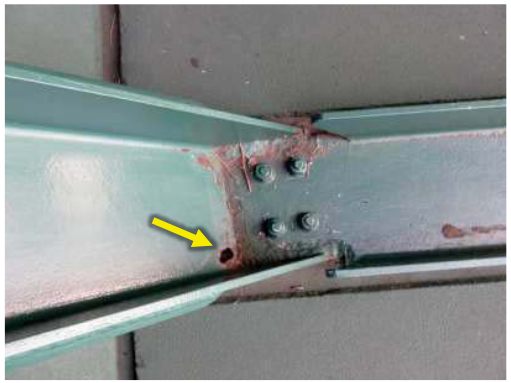


Figure 12. Example of structural steel member classified as Condition State 4. The yellow arrow points to a hole completely corroded through the thickness of the web of the steel member.

Figure 13. Additional example of structural steel member classified as Condition State 4.

Figure 14. Example of lightweight floor slab decking classified as Condition State 4.

SURVEY RESULTS AND DISCUSSION

The field work for the visual assessment of corrosion took place primarily during July and August 2018. Detailed findings are given in a series of appendixes, as follows:

Appendix A – Representative photographs of selected steel members and decking panels classified as CS3 or CS4, including narrative regarding assessment of apparent causes of observed corrosion, along with additional descriptive notes
Appendix B – Memos summarizing detailed findings for supplementation assessments of selected groups of members and ancillary structures (distributed electronically in report Volume 2 of 2)
Appendix C – Orientation drawings showing the locations within the stadium of steel members and lightweight decking panels classified as CS3 and CS4 (distributed electronically in report Volume 2 of 2)
Appendix D – Results of the member-by-member survey for the entire stadium (distributed electronically in report Volume 2 of 2)

Appendix A is organized into groups of members, based on the corrosion observed in similar types of members, as follows:

Group 01 - Raker Cantilever Assemblies on End Frames: Flange Corrosion
Group 02 - Endzone Exterior Diagonal Braces on Line F.9: Corrosion of Brace at Concrete Barrier
Group 03 - Plate Girders on Line F at Top of Blue Seating Section: Corrosion and Cracked Welds at Connections to Raker Frames
Group 04 - Lower Chord Horizontal Truss at Field Level: Corrosion at Connection of Acutely-Skewed Horizontal Truss Diagonal Brace to Bottom Chord of Radial Truss at End Frames
Group 05 - Fiberglass Angles: Overhead Falling Hazard and Corrosion at Attachment to Raker Frame Members above Concourses
Group 06 - Lightweight, Thin-System Floor Decking: Corrosion of Metal Deck
Group 07 - Orange Cross Aisle End Frame Beams: Corrosion at Beam Top Flange Supporting Deck Edges
Group 08 - Lower Concourse End Frame Beams: Corrosion at Beam Top Flange Supporting Deck Edges
Group 09 - Seat Plate Tread-and-Riser Rows: Corrosion at Seat Plates
Group 10 - Escalator Framing: Corrosion of Girders at Lower Concourse and of Beams at Field Level Landing
Group 11 - Radial Truss Framing Members: Corrosion at End Frame Radial Trusses
Group 12 - Upper and Lower Concourse Levels, Outer Perimeter Edge Beams: Corrosion at Beams
Group 13 - Red Seats Field-Fronting Beam: Flange Corrosion at Seat Plate Edges
Group 14 - Field -Fronting Framing Members along Grid Line A: Corrosion at Seat Plate Opening for Utilities
Group 15 - Sideline Stands Siding Girt Connections at End Frame Walls: Missing Bolts at Connections
Group 16 - Press Box Floor Framing Member Connection: Corrosion at Connection
Group 17 - Radial Trusses Supporting Orange Seats: Isolated corrosion at connections
Group 18 - Raker Frame at Box Seats Level: Corrosion at Raker Plate Welded Connections

As part of these assessments, each structural steel member and lightweight decking floor panel in the stadium is given a unique member identifier (Member ID). The member identification scheme is described in detail on Pages C-1 and C-2 of Appendix C.

Findings and discussion for various groupings of structural steel members, including the lightweight decking system, follow.

General Findings

The findings from our 2018 survey indicate that approximately 200 weathering steel members and approximately 85 panels of lightweight decking are presently observed to exhibit severe corrosion (cumulative of members and decking panels classified as CS3 and CS4). Our visual assessment found that essentially all of the original protective coatings, typically having a brown-colored top coat, at the observed weathering steel members have deteriorated. Corrosion to varying degrees has resumed at almost every weathering steel member having original coatings that we observed. The degree of resumed corrosion was observed to be highly variable, ranging from mild to severe. Severe corrosion (CS 3 and CS 4) is taken to be readily-observed, unabated corrosion on the weathering steel member that has resulted in pitting of the steel surface, pronounced corrosion scale accumulation (exfoliation), or both, either of which may represent a sufficient loss of steel that causes a reduction in the structural capacity the member or connection.

With respect to the lightweight floor decking, our 2018 visual assessment is the first time that the lightweight floor decking has been included in a comprehensive manner in any of the recent interim assessments for corrosion. Based on observations made of the underside of the lightweight floor decking, large extents of the lightweight decking do not exhibit severe corrosion. Nonetheless, severe corrosion (CS 3 and CS 4) was observed in the lightweight decking at isolated locations throughout the stadium. As described later in this report, the severe corrosion typically consists of section losses in the sub-decking hat channels, which can lead to a reduction in the structural capacity of the decking system in the area where the severe corrosion occurs.

Expected levels of work to address the steel members and decking panels classified as CS3 and CS4 are described later in this report.

Descriptions of particularly prominent or particularly extensive deterioration on members and decking panels classified as CS3 and CS4 follow below. Member group identifiers are as summarized above, and are the same as the member grouping scheme utilized in Appendix A. Additional information on member groups not described below can be found in Appendix A.

Beam Flanges in Raker Cantilever Assemblies (Group 01)

At each radial grid line throughout the stadium, there are cantilevered raker frame assemblies that structurally support the Red and Brown seating areas (Figure 15). The primary components of the raker assembly include a deep, structural steel, welded raker beam that directly supports the seat plates and cross aisle of the Red seating area (upper cantilevered beam), a more shallow, structural steel, welded raker beam that directly supports the seat plates and cross aisle of the Brown (loge) seating area (lower cantilevered beam), and a weathering steel wide flange member that appears to be a “column” but instead serves as a tension tie to transfer structural loads from the structural framing at the Brown seating level up to the structural framing at the Red seating level.

At several end raker frame locations, severe corrosion losses (CS3 and CS4) have been visually observed in the top flange of the deep raker beam supporting the Red seating level (Figure 16). Severe corrosion losses have also been observed in the top flange of the raker beam supporting the Brown seating level. There are a total of twelve end raker frames at the stadium, resulting in a total of twenty-four weather steel raker beams that potentially exhibit notable corrosion losses. There are similar cantilevered assemblies at the interior raker frames, but the beams of the interior cantilever assemblies do not exhibit corrosion to the same extent as do the beams on the end frame cantilever assemblies.

It appears that, over the years, rainwater has entered into operable access hatches in the floor deck at the ends of the cross aisles servicing the Red and Brown seating areas. The access hatches are located immediately above the subject raker beams in the end raker frames. The rainwater appears to have leaked directly onto the top flanges of the raker beams, resulting in notable corrosion to the top flanges of the raker beams due to relatively persistent wetness.

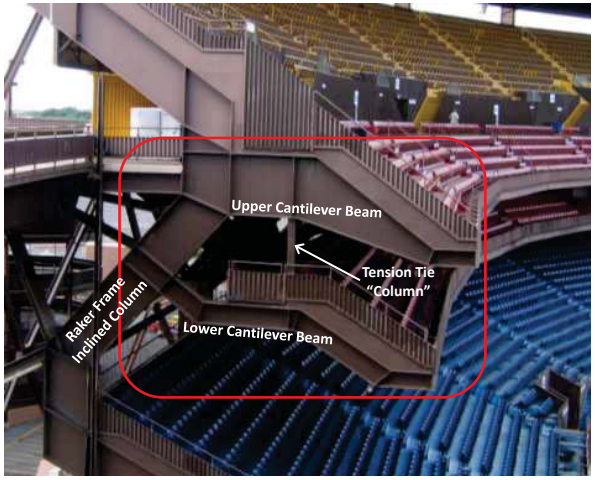


Figure 15. View of a typical end-bay raker frame, with cantilevered raker assembly highlighted by red box. Annotations indicate various features of the cantilevered assembly.

Figure 16. Corroding top flange of deep raker beam supporting the Red seating area. This location is in an end frame of the northeast sideline stands. The deep beam is one component of the cantilever raker assembly that supports the Red and Brown seating areas.

Because the structural configuration of the raker assemblies is cantilevered in nature, these assemblies in general lack structural redundancy, which in turn means that the probable consequences of structural failure of an assembly will likely be more severe than that of a structural member with redundancy. Consequently, the top flanges of the upper and lower cantilevered beams in these assemblies at several end-bay locations in the stadium were assessed in the field through physical measurements that estimated the extent of member cross-section lost in the top flanges due to corrosion. The field-measured section losses were used to estimate the remaining structural capacity of the as-corroded members. Structural demands, determined using current building code requirements, were then calculated for these members and subsequently compared to remaining structural capacities; the results of such comparisons are typically expressed numerically in terms of demand-to-capacity ratios.

Based on our field measurements and subsequent structural analyses, we find that the current structural capacities of the as-corroded cantilevered raker assemblies are such that demand-to-capacity ratios are less than 1.0, which means that even after accounting for the adverse structural effects of corrosion-related section losses, enough structural capacity remains such that the existing, as-corroded structural section satisfies the structural strength requirements of the building code.

In any event, the affected structural members in the cantilevered assembly will almost certainly continue to corrode, and if repairs are not implemented in a timely manner to mitigate the effects of continued corrosion and to restore structural capacities, the remaining structural capacities of the corroding members will likely reduce with time to structural capacities below those required by the building code. As summarized later in this report, it is recommended that the affected portions of the cantilevered raker assemblies be structurally repaired within a 24-month time period. Further details regarding our assessment of the affected cantilever raker assemblies is given in a memo included in Appendix B of this report.

Endzone Diagonal Braces at Concrete Barriers (Group 02)

A diamond-configuration, diagonal bracing frame exists at the rear of each of the two endzone seating stands. The structural members of the diagonal bracing frames are weathering-steel wide-flange structural shapes. At the main concourse level, concrete barriers are present where the lowest level of diagonal structural steel braces connects to the reinforced concrete substructure of the endzone seating stands (Figure 17). Although these concrete barriers are referred to as "thrust blocks" on the original architectural drawings, a review of the original structural drawings indicates that the barriers are lightly-reinforced, and as a result, the concrete barriers do not appear to serve a structural function. Instead, it is presumed that the concrete barriers are present as a measure to prevent vehicles from impacting the diagonal braces. The original, crica 1990s protective coatings on these particular weather steel braces have been removed and renewal protective coatings (green paint topcoat) have been applied within the past 10 years. While green-painted members are generally excluded from the approved scope of the present corrosion assessment, the corrosion-related losses were readily-noticed at some of these members, and as a result, green-painted members of this particular type were included in the present assessment.

During our August 2018 corrosion survey field activities, along with follow-up visual observation of these braces during September and November 2018, WJE observed severe corrosion losses (CS3 and CS4) in almost every brace, at the bottom end connections in the vicinity of the concrete barrier, where the structural steel brace connects to the reinforced concrete substructure of the seating stand. A representative location classified as CS4 is shown in Figure 18; a total of four braces were categorized as CS4. The locations on the braces where noted corrosion losses occurred are locations where, due to physical interference with the concrete barriers, it is difficult to apply protective coatings to the weathering steel brace member; these locations also are configured in a manner that tends to retain water and debris. As a result, despite having been re-coated within the past 10 years, corrosion of the weathering steel member is apparently on-going at a relatively accelerated rate at these locations because the protective coatings are locally failing.

Because of the severity of the observed corrosion losses (CS3and CS4), which included complete loss of section through the entire thickness of the web or the flange of some of the brace members, six brace members in the endzone seating sections of the stadium were selected for further assessment in the field through physical measurements that estimated the extent of member cross-section lost due to corrosion. The field-measured section losses were used to estimate the remaining structural capacity of the as-corroded brace members, specifically at the location where the brace member penetrates into the concrete barrier. Structural demands, determined using current building code requirements, were then calculated for these members and subsequently compared to remaining structural capacities; the results of such comparisons are typically expressed numerically in terms of demand-to-capacity ratios.

Based on our field measurements and subsequent structural analyses, we find that the current structural capacities of the as-corroded brace members are such that demand-to-capacity ratios are only slightly below 1.0. This means that the remaining structural capacity of the as-corroded brace member only marginally satisfies the structural strength requirements of the current building code.

Figure 17. Representative concrete barrier at base of structural steel braces that make up the diagonal bracing frame at the rear of the endzone seating stands (South endzone shown). The red arrow indicates viewing position for the photo of Figure 18.

Figure 18. Annotated photo showing severe corrosion conditions at base connection of steel brace member to the concrete barrier (South endzone).

In any event, the affected braces in the endzone seating stands will almost certainly continue to corrode, and if repairs are not implemented to mitigate the effects of corrosion and to restore structural capacities, the remaining structural capacities of the corroding endzone brace members will almost certainly be reduced to less than the structural capacities required by the building code. As summarized later in this report, it is recommended that the affected endzone braces be structurally repaired commencing immediately.

Because we have assessed only six out of a total of 40 brace-to-concrete barrier interfaces in both endzones, later in this report we recommend that all remaining endzone braces be examined up-close and subsequently assessed for the effects of corrosion losses, and that the concrete barrier in at least one location be at least partially dismantled to allow for examination of that portion of the structural steel brace that is embedded within the concrete barrier. These supplemental assessments are recommended to commence immediately. Further details regarding our assessment of the endzone braces is given in a memo included in Appendix B of this report.

Blue Seating Section, Line F Girder-to-Raker Connections (Group 03)

The concern with these particular connections was previously identified during the 2016 survey. Although these connections are anticipated for repair as part of the pending H&S5 project, at the time of this writing, the contract has not been awarded and so the connections have not yet been repaired. As a result, we continue to identify these connections as conditions to be addressed in a health and safety project.

Connections at the top of the blue sections are present at each numbered gridline. A structural steel angle connects the top flanges of two abutting girder ends to the vertically-oriented flange of the adjacent raker column (Figure 19).

Water becomes entrapped between the vertical leg of the angle and flange of the raker column. The entrapped moisture is causing corrosion on the connection angle and the flange of the raker column. The expansion of the corrosion products between the connection angle and the flange of the raker column applies a prying force to the connecting pieces that has resulted in partial or complete failure of the weld between the connection angle and the raker column flange at many of these connections (Figure 20 and Figure 21). Continued corrosion at these connections will result in further cracking of the affected welds. At the time of our survey, the welds have failed to various degrees at approximately 75 percent of these angle connections.

Figure 19. Typical location of problematic Blue seating section connection between girder and raker frame column.

Figure 20. The indicated weld line between connection angle and raker column flange has completely fractured.

Figure 21. The weld between the connection angle and raker column flange at this location has partially fractured.

Lightweight, Thin-System Floor Decking (Group 06)

Lightweight decking is included in the 2018 survey; the lightweight decking floor slabs have not otherwise been systematically included in any of the recent assessments for corrosion. Visual surveys were conducted from beneath for the lower (main) concourses of the sideline seating stands, for the upper concourse of all seating stands, and for cross aisles comprised of lightweight decking in all seating stands.

Severe corrosion was typically observed at locations where entry of water into the decking system is unmitigated, such as along the end bay radial trusses at the lower concourses of the sideline seating stands (Figure 22). Other locations where severe corrosion of the lightweight decking was observed also typically involved water leaks, such as at plumbing penetrations associated with toilet facilities (Figure 23). Unmitigated rainwater leaks through the sidewalls of the vomitory ramps of the main concourses in the sideline seating stands have been previously identified as affecting the lightweight decking floor slabs of the electrical rooms (Figure 24). These unmitigated rainwater leaks have also affected the lightweight decking of the vomitory ramps themselves and the lightweight decking at "back of the house" facilities such as maintenance rooms and concession storage areas.

As mentioned above, the severe corrosion in the lightweight decking at vomitory ramps and the electrical rooms had been previously identified as locations where the bearing of the floor span was determined to be unreliable at these locations. Installation of the supplemental support beams to stabilize these conditions at the electrical room is included in the H&S4 project; the other noted locations are anticipated to be addressed by the H&S5 project that is presently pending award. Provision for improved water control at the apparent leak source are also included in the H&S4 and H&S5 projects.

Figure 22. Representative severe (CS4) corrosion conditions observed in decking and hat-channel sub-decking of the lightweight floor system of the lower concourse of a sideline seating stands. Location shown is where the decking is supported by the end bay radial truss (at bottom of photo) of the sideline seating stand.

Figure 23. Deteriorated decking and sub-decking at plumbing penetrations servicing a toilet facility in a sideline seating stand.

Figure 24. Corrosion has occurred through the lightweight sub-decking hat channel that supports an electrical room floor at the Northeast Sideline seating stand.

Seat Plate Tread-and-Riser Rows (Group 09)

The concern with the seating plates was previously identified during the 2016 survey and in field surveys related to several of the health and safety construction projects. Some seating plate repairs were carried out during the H&S4 project, and additional seating plates are anticipated for repair as part of the pending H&S5 project. Furthermore, even after completion of seating plate repairs under the anticipated H&S5 project, significant additional extents of seating plates will likely require repair in the future. As a result, we continue to identify the seating plates as conditions to be addressed in a health and safety project.

The seating plates, constructed of conventional mild steel, have not been recoated since the 1980s and 1990s. Areas of these original coatings have failed. This leaves the steel seating plates directly exposed to the chloride-laden atmosphere, and as a result, the seating plates are now corroding. Additionally, some areas of the seating plates include construction details that are vulnerable to corrosion and also do not slope properly to drain, exacerbating the corrosion. The steel seating plate has corroded completely away in some locations, particularly in the Orange seating area of the sideline stands, resulting in holes through steel seating plates.

The seating plates throughout the stadium were visually surveyed on various dates during the period between April 2015 through September 2016, and again in late 2017 and early 2018, for severely corroded conditions as part of the design phase of the H&S4 and H&S5 projects, respectively. Results of these health and safety design-phase investigations are summarized in Table 3.

Table 3. Summary of Seat Plate Findings

Condition State	Location	Notes
CS4	59 Selected Rows, Orange seating; Section PP, Row 16, Yellow seating	Corrosion mitigation included in scope of H&S4
CS4	10 Selected Rows, Orange seating	Corrosion mitigation anticipated to be included in scope of H&S5
CS3	Orange Aisles with Step Boxes (All Sideline Stands)	Corrosion mitigation included in scope of H&S4
CS3	Balance of Orange sideline seating	These areas contain lapped joints, and ineffective drainage, which are accelerators of corrosion
CS3	Yellow Seating, Northeast Sideline Stands only	These areas contain lapped joints, and ineffective drainage, which are accelerators of corrosion
CS2	Brown Seats	These areas contain lapped joints, and questionable drainage, However the seating plates are in relatively less deteriorated condition that other seating areas, with respect to corrosion.
CS2	Red Seats, Northeast Sideline Stands and seating sections U, V, UU & VV in the North Endzone Stands	These areas contain lapped joints, and questionable drainage, However the seating plates are in relatively less deteriorated condition than other seating areas, with respect to corrosion.
CS2	Balance of seating bowl	During prior repair campaigns, lapped joints were fully welded and nominally horizontal portions of the seat plates were re-sloped for improved drainage.

Ancillary Entry Gate Overhead Structures

Limited visual assessments of the overhead structures at vehicular and pedestrian entry gates, which may be commonly described as roof canopies, have not been included in any recent assessment for corrosion at the Aloha Stadium. Given the limited size of the typical overhead structure at an entry gate of either type, a condition state was holistically assigned to an entire overhead structure, as opposed to assigning a series of condition states to individual structural members within an overhead structure. Our assessment included two vehicular entry gate overhead structures and six pedestrian entry gate overhead structures. The structural steel framing members for the vehicular entry gate overhead structures were categorized as CS2, except that the sheet metal cladding and roofing panels were classified as CS3. The six pedestrian entry gate overhead structures were categorized as CS4. The corrosion damage at pedestrian entry Gate 1 was found to be so severe that it is recommended to immediately repair or immediately dismantle the structure at this particular entry gate. Further details regarding our assessment of both types of entry gate overhead structures are given in two separate memos included in Appendix B of this report.

Rate of Corrosion

The rate of corrosion of weathering steel exposed to a high-chloride environment such as Hawaii can be approximated as an exponential relationship that increases with time. However, the rate of corrosion is also dependent on factors that are not readily quantifiable for the conditions encountered at Aloha Stadium. Therefore, it is not feasible to forecast the rate at which structural weathering steel members with deteriorating original coatings applied in the 1980s and 1990s will corrode at the Aloha Stadium.

Nonetheless, the findings from our 2018 survey when compared to those of the 2016 survey, provide meaningful, quantitative information regarding the actual progression of corrosion at the Aloha Stadium.

The locations where structural steel members have been categorized as CS3 and CS4 are graphically summarized in Figure 25 for the 2016 survey, and in Figure 26 for the 2018 survey; these figures also include locations where metal decking panels and seating plate rows are categorized as either CS3 or CS4, but do not include locations where fiberglass angles were identified as potential falling hazards.

The findings of the 2018 survey indicate that approximately 200 weathering steel members are presently categorized as either CS3 or CS4, which means that these members exhibit severe corrosion. In our 2016 survey, approximately 50 weathering steel members were categorized as either CS3 or CS4. Over the course of approximately two years, the cumulative number of steel framing members categorized as either CS3 or CS4 has *increased* by 300 percent. This is quantifiable evidence that the adverse effects of corrosion at the Aloha Stadium are increasing with time.

The findings of the 2018 survey indicate that approximately 85 panels of the lightweight floor slab decking are presently observed to exhibit severe corrosion (CS3 and CS4). Although lightweight decking was not surveyed in 2016, based on anecdotal reports from stadium staff, the number of maintenance-related concerns involving lightweight decking has generally increased with time in recent years. This is anecdotal evidence that the adverse effects of corrosion at the Aloha Stadium are increasing with time.

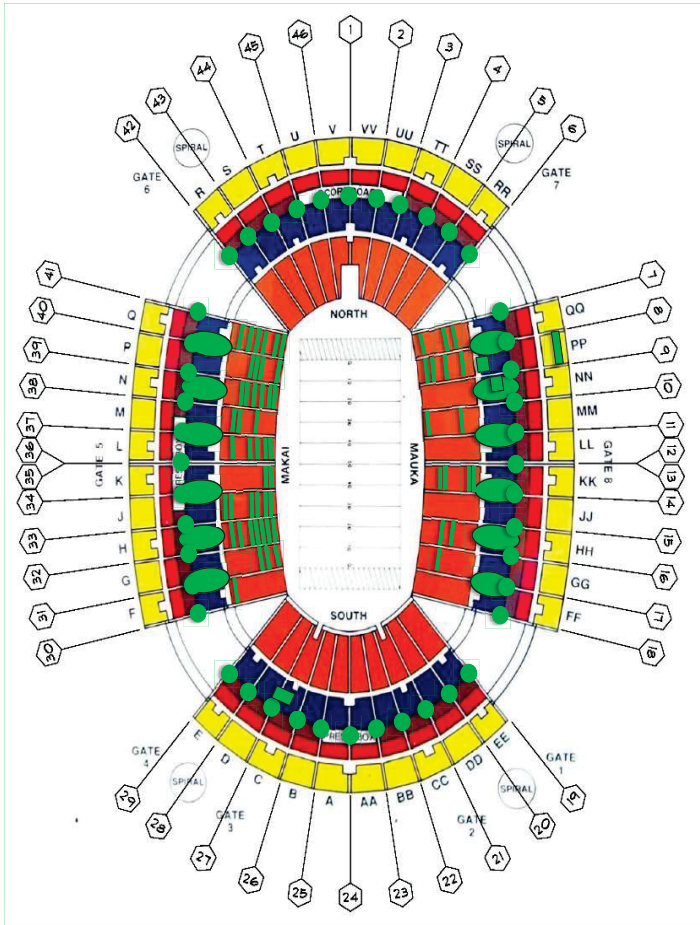


Figure 25. Graphical depiction of locations of recommended repairs: 2016 corrosion assessment

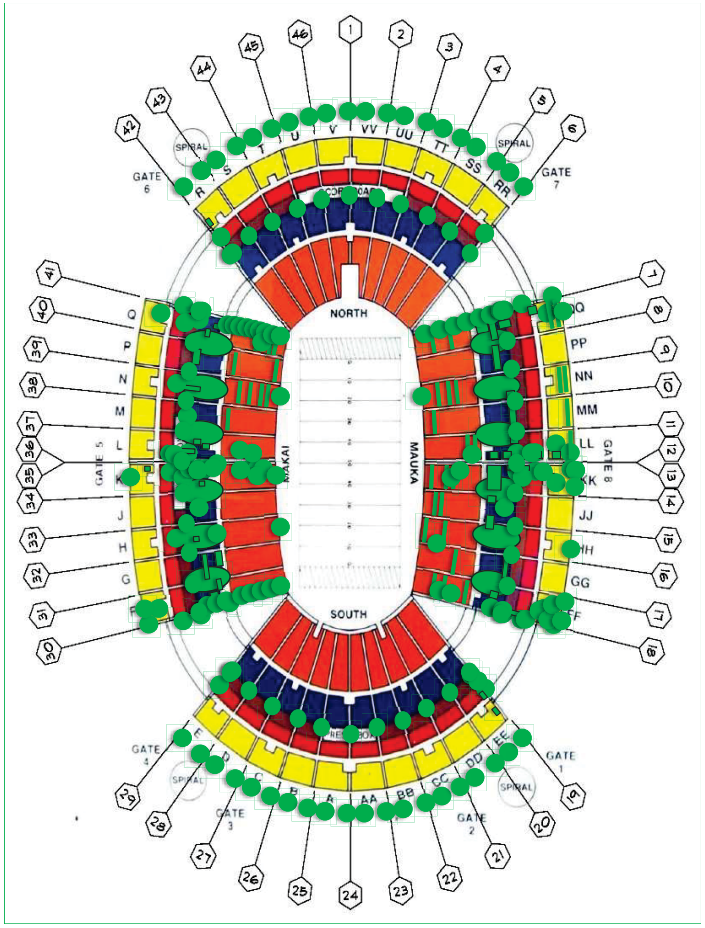


Figure 26. Graphical depiction of locations of recommended repairs: 2018 corrosion assessment

SUMMARY AND RECOMMENDATIONS

The results of the corrosion assessment lead to the following recommendations.

Expected Levels of Work

Based on the observed condition state, expected levels of work to address identified concerns are as follows:

- Condition State 1 (CS1) – Remediation of concerns with steel members classified as CS1 involves an application of maintenance overcoats onto the topcoats of the corrosion mitigation coatings within the window of maintenance overcoating feasibility, estimated to be 10-15 years from the application of the corrosion mitigation coatings that are in place. The undersides of the lightweight decking system panels that are classified as CS1 should be recoated with corrosion mitigation coatings and the pedestrian traffic coatings on the concrete walking surface should be replaced, along with repairs to the concrete substrate; however, in lieu of maintenance-type repairs, it may be more cost-effective over the long term to replace the lightweight decking system with a thicker, conventional composite metal decking system.
- Condition State 2 (CS2) – Remediation of concerns with steel members classified as CS2 involves entire removal of existing protective coating systems and installation of new corrosion mitigation protective coating systems. Areas of lightweight decking system classified as CS2 should be replaced with a thicker, conventional composite metal decking system.
- Condition State 3 (CS3) – Remediation of concerns with steel members classified as CS3 involves complete removal of existing protective coating systems and installation of new corrosion mitigation protective coating systems. High priority CS3 steel members have active corrosion concerns that should be considered for mitigation in the near-term, but not necessarily needing intervention in the next 24 months. Similarly, high-priority areas of metal decking classified as CS3 should be replaced with a thicker, conventional composite metal decking system in the near-term, but not necessarily needing intervention in the next 24 months.
- Condition State 4 (CS4) – Remediation of concerns with steel members classified as CS4 requires structural modifications to strengthen affected components of the member or to eliminate construction details that inadvertently result in accelerated corrosion. CS4 steel members identified as “Immediate” priority have concerns over structural performance that should be addressed immediately; and CS4 steel members identified as “24 month” priority have concerns over structural performance that should be addressed within 24 months. High-priority areas of metal decking classified as CS4 should be replaced with a thicker, conventional composite metal decking system within the next 24 months.

Identified Concerns Requiring Repair

We recommend that the concerns identified as CS3 and CS4 in Table 1 of the Executive Summary section of this report be repaired. Concerns identified in Table 2 of the Executive Summary section that are anticipated for completion within H&S5 or are still pending continue to be recommended for repair. Both tables also list priority for repairs. Please refer to group summaries in Appendix A for additional details regarding the specific concerns listed in the tables.

Structural members and connections that have been rated CS4 are recommended to be structurally repaired within the next 24 months relative to the inspection date of August 2018, as summarized in Table 1 and Table 2. The members and connections identified as CS3 should be given priority for repair after completion of the CS4 repairs. Depending upon the extent of cumulative corrosion damage, there is the possibility that the corrosion damage may have reduced the load capacity of a structural member or its

structural connections. Repair designs for CS4 and CS3 members should evaluate corrosion losses in detail, and should include structural strengthening if the member is overstressed.

Members identified as CS2 are not considered structurally problematic at present time. However, it is financially prudent to perform maintenance on these members with available funding before the corrosion progresses to a CS3, which may involve more extensive repairs or reconstruction in addition to installation of corrosion mitigation protective coating systems.

Supplemental Corrosion Assessments in the Near-Term

A number of locations where members have been identified as CS4 during the 2018 survey warrant detailed, up-close physical inspection to provide for an appropriate final assessment and determination of repairs. In addition to up-close visual observations, measurement of section loss may also be warranted for weathering steel structural members. Recommended supplemental assessments are as follows:

- Systematic, up-close examination for and measurement of corrosion losses of the endzone diagonal braces at the concrete barriers (Group 02 members in Appendix A), for all remaining endzone braces not assessed in the present study. Exploratory investigation into the concrete of at least one barrier at south endzone is also recommended. It would however be preferable to investigate into the concrete of more than one barrier, and to also include concrete barriers in the north endzone.
- Up-close investigation and corrosion loss measurements of the skewed connections in between the horizontal truss at field level and the bottom chords of the radial truss end frames at Grid Line F.9 (Group 04 members in Appendix A).
- Detailed investigation of the lightweight floor decking panels at bathroom plumbing penetrations and chases (a selected portion of Group 06 members in Appendix A).
- Detailed investigation of the decking at end raker frames where curved pedestrian passage bridges connect to lower and upper concourses (a selected portion of Group 08 members in Appendix A).

It is recommended that these additional assessments be completed within 12 months, relative to our inspection date of August 2018, with the exception of the recommended assessment regarding Group 01 and Group 02 members, for which the additional investigations are recommended to commence immediately.

Recurring Structural Inspections

The unpredictability of future corrosion-related structural damage leads to the recommendation that recurring structural inspections take place so that active corrosion can be identified before the extent of corrosion-related damage reduces calculated structural capacity of a member or a connection to a level below structural acceptability. Furthermore, given the undetermined timeline related to possible construction of a new stadium, and thus also an undetermined timeframe for keeping the Aloha Stadium in service to the public, it is also appropriate to identify future necessary structural safety improvements by a program that includes recurring structural inspections.

Given the 300 percent increase over the past two years in the number of members classified as severely corroded (members classified as either CS3 or CS4), a one-year interval between inspections is recommended. This is one-half of the usual interval between inspections for highway bridges (23 CFR 650.311); this reduction is warranted due to the use of weathering steel for primary structural framing members and by the 300 percent increase in the number of severely corroded members observed in 2018 as compared to 2016. Therefore, the next recurring inspection of the Aloha Stadium is recommended to be

completed no later than August 2019, unless conditions come to light that warrant a shorter interval between inspections.

Ageing of Renewed Protective Coating Systems

As summarized earlier in this report, the State of Hawaii began a phased program for renewal of the circa 1980s and 1990s protective coatings system. Renewal protective coatings have been installed over a series of construction projects, commencing with construction projects that were completed in 2009, and continuing to the present, because significant portions of the stadium have yet to receive renewed protective coatings.

Commonly-accepted practice within the coatings industry includes periodic visual assessment of protective coatings systems, prior to the end of their anticipated service life. Based on the anticipated service life of the fluoropolymer top coat material of the renewal coating system, which is 15 years, it is recommended that periodic visual assessments of the renewal coating system commence at 10 years of in-service life of the renewal coating system. It is recommended that the visual inspections commence prior to achievement of the anticipated service life of the topcoat so that coating system performance concerns can be detected in advance of the lapsing of the warranties for the coating system work.

At the time that the recommended 2019 inspections are anticipated to be performed, renewal protective coating systems that were installed under construction contracts where work was completed in 2009 through 2011 will have been in service for an average of 10 years. It is therefore recommended that weathering steel members which received renewed protective coatings under the following construction contracts be included in the 2019 inspections:

- Phase 1 [“Aloha Stadium, Replace Metal Roof Deck And Transformers (Sections FF to KK and RR to VV) DAGS Job No: 12-10-0518] - Completed 2009
- Phase 2 [“Aloha Stadium, Replace Metal Roof Deck And Transformers (Sections LL TO QQ, R & S, & L TO Q) DAGS Job No: 12-10-0598] - Completed 2010
- Phase 3 [“Aloha Stadium, Replace Metal Roof Deck And Transformers (Sections AA TO EE, & A TO K) DAGS Job No 12-10-0620] - Completed 2011

Continued Operations

Due to their criticality to continued structurally-safe operations of the existing stadium, particular members classified as CS4 are identified to be repaired immediately. If these repairs cannot commence immediately, the members identified for immediate repair should be monitored for on-going deterioration during the delay period; the delay period should not exceed 1 year. The intent of the monitoring would be to generally assess that the stadium can be occupied for continued operations during the delay period. The nature of the monitoring program, and the frequency of monitoring, remain to be developed.

Presuming that repairs to the members classified herein as CS4 are completed within two years from the date of our most recent inspections (August 2018), the stadium can be occupied for continued operations.

Projections of suitability for continued service cannot be reliably made beyond a one-year interval due to rates of corrosion that cannot be determined, as evidenced by the 300 percent increase over the past two years in the number of members classified as severely corroded. Suitability for continued operations beyond August 2019 will be determined on the basis of the next recurring inspection, which is recommended to be completed not later than August 2019.

It can be anticipated that previously-unidentified repair design and construction projects may arise from the findings of future annual recurring inspections; therefore, contingency budgets for necessary structural maintenance at the Aloha Stadium should be established, even in the event that a firm decision is made by the State to replace the Aloha Stadium with a new stadium. Structural maintenance remains necessary even after such a decision has been made so that the Aloha Stadium remains structurally safe while it is open to the public during the multi-year period that a new stadium is funded, designed and constructed.

APPENDIXES

A. Summaries of Members Rated Condition States 3 and 4
B. WJE Assessment Memos (distributed electronically in report Volume 2)
   - Memo Regarding Pedestrian Entry Gates
   - Memo Regarding Vehicular Entry Gates
   - Memo Regarding Cantilever Raker Assemblies
   - Memo Regarding Endzone Diagonal Braces
C. Orientation Plan and Elevation Drawings Noting Locations of Members Rated Condition States 3 and 4 (distributed electronically in report Volume 2)
D. Tabulation of Corrosion Survey Data (distributed electronically in report Volume 2)

WJE ENGINEERS ARCHITECTS MATERIALS SCIENTISTS

APPENDIX A

SUMMARIES OF MEMBERS CLASSIFIED AS CONDITION STATE 3 OR 4

Group 01 - Raker Cantilever Assemblies on End Frames: Flange Corrosion

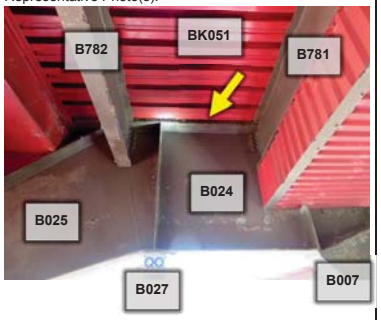
Reference, Appendix C Page No(s):
3, 13, 23, 28, 40, 45, 57, 67, 77, 82, 94, 99

CS4 Piece Count: 7
Member(s): A015, B024, B149, D012, D015, E152, F024

CS3 Piece Count: 18
Member(s): A009, A232, A238, B021, B152, C021, C024, C149, C152, D009, D232, D238, E021, E024, = E149, F021, F149, F152

Stand Module(s): All
Nearest Plan Grid Intersection(s): 6,7,12,13,18,19,29,30,35,36,41,42 & E.6
Nearest Seating Section(s): E,F,K,L,Q,R,RR,QQ,LL,KK,FF
Approximate Vertical Position(s): Loge and Red Seats

Representative Photo(s):



Apparent Corrosion Accelerator:

Poor detailing at the edges of the cross aisle decks supported by the cantilever raker assemblies has allowed water to become entrapped on the top surface of the top flanges of the assemblies' beam members, leading to corrosion. At one grid line, corrosion likely due to standing rainwater has been observed at the base of the tension tie ("column") that is used to suspend the Loge seating level from the Red seating level above.

Other Notes:

Corrosion in the tension region of the top flanges of the raker beams in these cantilever assemblies is of particular concern. The significance of this specific condition has been evaluated by field measurement and an analytical evaluation. Findings are be presented in more detail in a memo provided in Appendix B.

Group 02 - Endzone Exterior Diagonal Braces on Line F.9: Corrosion at Connections to Concrete Substructure at Concrete Barrier

Reference, Appendix C Page No(s):
19, 20, 73, 74

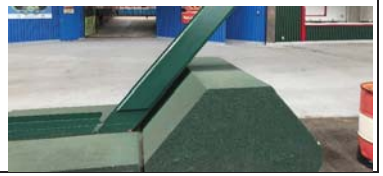
CS4 Piece Count: 4
Member(s): A305, D291, D292, D293
CS3 Piece Count: 36
Member(s): A289, A290, A291, A292, A293, A294, A295, A296, A297, A298, A299, A300, A301, A302, A303. A304, A306, A307, A308, D289, D290, D294, D295, D296, D297, D298, D299, D300, D301, D302, D303, D304, D305, D306, D307, D308
Stand Module(s): North and South Endzones
Nearest Plan Grid Intersection(s): 1-6, 19-29 and 42-46 at F.9
Nearest Seating Section(s): A-E, AA-EE, R-V, RR-VV
Approximate Vertical Position(s): Lower (Main) Concourse

Apparent Corrosion Accelerator:
A non-draining pocket where the diagonal brace connects to a cross-tie member and also penetrates into the concrete barrier has retained debris, likely resulting in promotion of corrosion due to prolonged wetness.

Other Notes:
Corrosion has progressed in diagonal brace member webs and flanges to a perforated condition, resulting in loss of load-bearing capacity.

The significance of this specific condition has been evaluated by field measurement and an analytical evaluation. Findings are presented in more detail in a memo provided in Appendix B. It is also recommended that all remaining, similar locations be inspected in greater detail for similar conditions, and further repairs implemented as necessary.

Representative Photo(s):



Group 03 - Plate Girders on Line F at Top of Blue Seating Section: Corrosion and Cracked Welds at Connections to Raker Frames

Reference, Appendix C Page No(s):
3-13, 23-28, 40-45, 57-67, 77-82, 94-99

CS4 Piece Count: 30
Member(s): A029, A183, A205, A227, B033, B058, B083, B108, B133, C005, C033, C058, C083, C108, C133, D029, D051, D183, D205, D227, E005, E033, E058, E083, E108, E133, F005, F033, F108, F133
CS3 Piece Count: 11
Member(s): A004, A051, A073, A117, A161, D004, D073, D095, D161,F058, F083
Stand Module(s): all
Nearest Plan Grid Intersection(s): various
Nearest Seating Section(s): various
Approximate Vertical Position(s): Blue Seating Level

Apparent Corrosion Accelerator:
A crevice at a faying surface within a connection entraps water, resulting in corrosion. The expansive corrosion has caused weld fractures at the connections at many locations.

Other Notes:
The structural design intent of the angle connection is unknown but these angles appear to stabilize the members involved. Therefore, these connections are recommended to be repaired. The locations of these connections sometimes coincide with locations previously identified for recommended voluntary structural upgrade. Designs to mitigate this condition should consider compatibility, or implementation of the previously identified strengthening concept.

Repair to all locations is anticipated to occur in the H&S5 project.

Representative Photo(s):

Group 04 - Lower Chord Horizontal Truss at Field Level: Corrosion at Connection of Acutely Skewed Horizontal Truss Diagonal Brace to Bottom Chord of Radial Truss at End Frames

Reference, Appendix C Page No(s):
29, 46, 83, 100,

CS4 Piece Count: 6
Member(s): B225, B234, C225, C250, E225, E250
CS3 Piece Count: 4
Member(s): B250, B290, C234, F234

Stand Module(s): All Sidelines
Nearest Plan Grid Intersection(s): 7, 12, 13, 18, 30, 36, 36, 41 & G
Nearest Seating Section(s): F, K, L, Q, QQ, LL, KK, FF
Approximate Vertical Position(s): Field Level

Apparent Corrosion Accelerator:
Non-draining pocket condition at the connection has retained debris, likely resulting in accelerated corrosion due to prolonged wetness.

Other Notes:
Corrosion has affected radial truss bottom chord member webs to a nearly-perforated condition; additionally, some bolt heads in the connection have been essentially rendered ineffective by the corrosion.

Representative Photo(s):

Group 05 - Fiberglass Angles: Overhead Falling Hazard and Corrosion at Attachment to Raker Frame Members Above Concourses

Reference, Appendix C Page No(s):
28, 40, 41, 42, 43, 44, 45

CS4 Piece Count: 0
CS3 Piece Count: Many
Member(s): B138, C010, C038, C063, C088, C113, C138, plus others
Stand Module(s): NESL, SESL
Nearest Plan Grid Intersection(s): 12, 13, 14, 15, 16, 17, 18 & F-G
Nearest Seating Section(s): Various
Approximate Vertical Position(s): Yellow Seating

Apparent Corrosion Accelerator:
Fiberglass angles affixed to the steel beam created a water retaining crevice, which leads to localized corrosion of raker member flanges.

Other Notes:
The fiberglass angles have previously been identified as presenting a falling object hazard. Refer to Appendix D of the October 26, 2016 corrosion assessment report for assessment and recommendations related to the fiberglass angles.

The angles have been removed from throughout the NESL upper concourse, while other angles at locations with relatively advanced corrosion have also been removed at scattered locations elsewhere in the stadium. The falling hazard at locations where the fiberglass angles remain in place are anticipated to be mitigated in H&S5.

Representative Photo(s):

Group 06 - Lightweight, Thin-System Floor Decking: Corrosion of Metal Deck

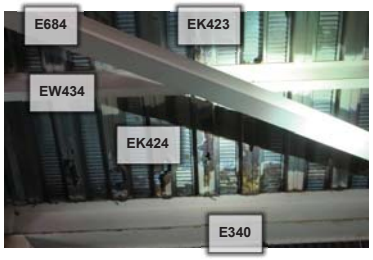
Reference, Appendix C Page No(s):
16a, 30, 33, 47, 50, 70a, 84, 87, 101

CS4 Piece Count: 44
Member(s): BK021, BK120, BK121, BK122, BK123, BK410, BK411, CK010, CK011, CK012, CK321, CK322, CK412, CK433, DK060, DK071, DK077, EK000, EK002, EK003, EK005, EK011, EK012, EK030, EK120, EK121, EK122, EK123, EK220, EK221, EK403, EK411, EK423, EK424, EK464, FK011, FK012, FK321, FK322, FK410, FK411, FK412, FK423, FK424

CS3 Piece Count: 42
Member(s): AK051, AK060, BK011, BK020, BK021, BK022, BK023, BK024, BK051, BK060, BK223, BK224, BK321, BK322, BK323, BK421, BK423, BK424, BK450, BK473, CK000, CK001, CK002, CK003, CK004, CK005, CK030, CK100, CK101, CK103, CK200, CK410, CK451, CK473, EK020, EK021 EK102, EK103, EK420, EK421, FK021, FK221,

Stand Module(s): All
Nearest Plan Grid Intersection(s): many
Nearest Seating Section(s): many
Approximate Vertical Position(s): concourses

Representative Photo(s):



Apparent Corrosion Accelerator:

Factors that promote corrosion of the lightweight, thin-system floor decking include: crevices at edge and other support detailing, poor water management, deck traffic coatings in use beyond their effective waterproof service life, poor integration of overlying partition walls, and accumulation of debris within the system components.

Other Notes:

The lightweight, thin decking system is prone to corrosion. Patching and localized repairs are regular maintenance tasks for the stadium management. Prior projects have comprehensively replaced the thin decking systems in-kind throughout almost the entire stadium. More recent projects have included replacement of the decking with a more robust, composite concrete-and-metal deck system at the main concourse level in the northeast and northwest sidelines. H&S4 has temporarily stabilized corroded decking systems beneath the electrical rooms at the lower concourse level, and temporary stabilization is anticipated to be installed at some vomitory ramps under H&S5; however the decking at the electrical rooms and vomitory ramps should be completely replaced in a future construction project.

Group 07 - Orange Cross Aisle End Frame Beams: Corrosion at Beam Top Flange Supporting Deck Edges

Reference, Appendix C Page No(s):
77, 82

CS4 Piece Count: 2
Member(s): EW242, EW404
CS3 Piece Count: 1
Member(s): EW001
Stand Module(s): SWSL
Nearest Plan Grid Intersection(s): 30, 35 & D.7 - D.9
Nearest Seating Section(s): F, K
Approximate Vertical Position(s): Lower concourse

Representative Photo(s):

Apparent Corrosion Accelerator:

Poor detailing at the edges of the decks has allowed water to become entrapped on the top surface of the top flanges of the weathering steel members that support the decking where the Orange level cross aisle terminates at the raker frame end bay.

Other Notes:

Top flanges of beams supporting the deck assembly are primarily affected, deck replacement projects in the Northeast and Northwest sidelines lower concourses have developed details to mitigate these issues. Repairs for remaining identified locations are anticipated to occur in H&S5.

Group 08 - Lower Concourse End Frame Beams: Corrosion at Beam Top Flange Supporting Deck Edges

CS4 Piece Count: 4
Member(s): FW042, FW241, FW242, FW442
CS3 Piece Count: 11
Member(s): B341, C301, C304, CW042, CW242, E299, E340, E343, E374, EW042, EW242
Stand Module(s): NESL, NWSL, SWSL
Nearest Plan Grid Intersection(s): Various
Nearest Seating Section(s): Various
Approximate Vertical Position(s): Lower Concourse

Apparent Corrosion Accelerator:
Poor detailing at the edges of the decks has allowed water to become entrapped on the top surface of the top flanges of these members, thereby promoting corrosion.

Other Notes:

Reference, Appendix C Page No(s):
30, 47, 84, 101

Representative Photo(s):

Group 09 - Seat Plate Tread-and-Riser Rows: Corrosion at Seat Plates

CS4 Piece Count: 0
CS3 Piece Count: 35 (Based on seat plate repairs shown on H&S5 drawings)
Member(s): BF011, BF020, BF209, BF212, BF215, BF306, BF426, BF427, BY010, BY012, BY215, BY216, BY315, BY416, CF003, CF010, CF013, CF107, CF108, CF201, CF211, CF317, CF409, CF413, CF427, FF124, FF207, FF208, FF304, FF211, FF215, FF327, FF406, FF407, FF415
Stand Module(s): All Sidelines
Nearest Plan Grid Intersection(s): Various
Nearest Seating Section(s): Various
Approximate Vertical Position(s): Orange Seating, NESL Yellow Seats

Apparent Corrosion Accelerator:
Lapped seams and lack of slope in the steel seating plate tread-and-riser system retain water.

Other Notes:
Holes through the seating plates caused by corrosion results in both safety concerns and also leakage through seating plates that is accelerating corrosion in base truss members at certain locations below the Orange seating section. H&S4 has repaired some of the most severely corroded locations. H&S5 is anticipated to repair additional severely corroded locations in the NWSL. However numerous additional seat plate locations throughout the entire stadium will nonetheless require repair in future H&S projects.

Reference, Appendix C Page No(s):
Refer to H&S5 Construction Drawings

Representative Photo(s):

Group 10 - Escalator Framing: Corrosion of Girders at Lower Concourse and of Beams at Field Level Landing

Reference, Appendix C Page No(s):
46, 83

CS4 Piece Count: 2
Member(s): CW112, EW312
CS3 Piece Count: 2
Member(s): CM018, EM018
Stand Module(s): SWSL, SESL
Nearest Plan Grid Intersection(s): 13-14, 34-35 & F-G
Nearest Seating Section(s): K, KK
Approximate Vertical Position(s): Field Level

Representative Photo(s):

Apparent Corrosion Accelerator:
A poorly detailed interface between the steel plate deck at the escalator landing at field level in the sideline seating stands and the framing beam that supports the steel plate deck creates a crevice that entraps water, thereby promoting corrosion. At the lower (main) concourse level, water draining from the surface of the concourse slab enters into the escalator opening, causing corrosion of the girder members that frame the openings.

Other Notes:
Repairs conducted in H&S3 addressed similar detailing in contiguous areas of the field-level escalator landings. Repairs to these additional noted corroded conditions were included in an alternate design for H&S5, which is not anticipated to be awarded. Similarly for the girder at the lower concourse level, repairs to the girders at the concourse level were to be repaired in H&S5, but that portion of the work is no longer anticipated to be included in the scope of construction to be awarded.

Group 11 - Radial Truss Framing Members: Corrosion at End Frame Radial Trusses

Reference, Appendix C Page No(s):
23, 28, 40, 45, 77, 82, 94, 99

CS4 Piece Count: 1
Member(s): C543
CS3 Piece Count: 45
Member(s): B001, B253, B255, B256, B257, B464, B465, B515, C251, C290, C291, C293, C296, C449, C465, C514, C518, C685, E254, E255, E256, E257, E290, E291, E292, E294, E464, E465, E468, E515, E516, E544, E690, F129, F171, F290, F294, F295, F296, F297, F343, F465, F514, F515, F516
Stand Module(s): All Sidelines
Nearest Plan Grid Intersection(s): 7, 12, 13, 18, 30, 35, 36, 41 & A - G
Nearest Seating Section(s): QQ, LL, KK, FF, F, K, L, Q
Approximate Vertical Position(s): Field level

Representative Photo(s):

Apparent Corrosion Accelerator:
At numerous locations within the end bay radial trusses of the sideline seating stands, poor detailing at primary and secondary connections and at wall panel supports create crevices, which entrap water and trash. These undesirable features have promoted corrosion.

Other Notes:
Mitigation of corrosion should be prioritized for the end frame radial trusses to prevent continuing progress of the corrosion to CS4. Strengthening of members and connection details to current wind loading requirements should be considered as part of any corrosion mitigation effort.

Group 12 - Upper and Lower Concourse Levels, Outer Perimeter Edge Beams: Corrosion at Beams

CS4 Piece Count: 1
Member(s): C444
CS3 Piece Count: 7
Member(s): B717, C435, C436, C440, C734, E435, E443
Stand Module(s): NESL, SESL, SWSL
Nearest Plan Grid Intersection(s): Various radial grid lines & Grid F.8
Nearest Seating Section(s): Various
Approximate Vertical Position(s): Lower and upper concourses

Apparent Corrosion Accelerator:
Poor detailing at the edges of the decks has allowed water to become entrapped on the top surface of the top flanges of these members, resulting in corrosion. Drainage at the scuppers that service the gutter along the outside edge of the concourses apparently leak and result in persistent wetness on the top flanges of the edge framing members.

Other Notes:
Top flanges that support the concourse decking assembly are primarily affected. Deck replacement projects in the Northeast and Northwest sidelines lower concourses have developed details to mitigate these issues.

Reference, Appendix C Page No(s):
33, 47, 50, 84

Representative Photo(s):

Group 13 - Red Seats Field-Fronting Beam: Flange Corrosion at Seat Plate Edges

CS4 Piece Count: 0
CS3 Piece Count: 4
Member(s): E789, F709, F789, F795
Stand Module(s): SWSL
Nearest Plan Grid Intersection(s): 32-33, 38-39, 40-41 & E.5
Nearest Seating Section(s): H, N, Q
Approximate Vertical Position(s): Red Seating Level

Apparent Corrosion Accelerator:
A poorly detailed interface between the steel plate deck and supporting beam creates a crevice that entraps water, leading to corrosion.

Other Notes:

Reference, Appendix C Page No(s):
87, 104

Representative Photo(s):

Group 14 - Field-Fronting Framing Members along Grid Line A: Corrosion at Seat Plate Opening for Utilities

CS4 Piece Count: 0
CS3 Piece Count: 4
Member(s): B159, E159, E161, F159
Stand Module(s): NESL, SWSL, NWSL
Nearest Plan Grid Intersection(s): 9-10, 32-33, 34-35, 38-39 & A
Nearest Seating Section(s): NN, H, K, N
Approximate Vertical Position(s): Field Level

Apparent Corrosion Accelerator:

Poor detailing exists at penetrations that allow utilities to pass from interior to exterior, allowing water ingress and entrapment at crevices created by the penetrations; this has promoted corrosion of the framing members along Grid Line A of the sideline stands.

Other Notes:

Reference, Appendix C Page No(s):
29, 83, 100

Representative Photo(s):

Group 15 - Sideline Stands Siding Girt Connections at End Frame Walls: Missing Bolts at Connections

CS4 Piece Count: 0
CS3 Piece Count: 3
Member(s): ES421, ES441, FS011
Stand Module(s): NWSL, SWSL
Nearest Plan Grid Intersection(s): D.5-E, E.5-F & 35; C.7-D.5 & 36
Nearest Seating Section(s): K, L
Approximate Vertical Position(s): Field Level

Apparent Corrosion Accelerator:

Siding girts with questionable connection detailing have been flagged for assessment of structural capacity.

Other Notes:

Historically, the orientation of the siding girts on the sideline seating stands base truss cladding were inverted to a flanges-down configuration to avoid debris entrapment. The noted connections may have been inappropriately modified during that process.

Reference, Appendix C Page No(s):
82, 94

Representative Photo(s):

Group 16 - Press Box Floor Framing Member Connection: Corrosion at Connection

CS4 Piece Count: 0
CS3 Piece Count: 1
Member(s): F006
Stand Module(s): NESL
Nearest Plan Grid Intersection(s): 11, F
Nearest Seating Section(s): H
Approximate Vertical Position(s): Loge Seating Level

Apparent Corrosion Accelerator:
A poorly detailed connection of a steel tube floor beam to the web of a raker frame column is corroding.

Other Notes:
The steel tube floor beam provides support to the floor decking of the football press box. However, a football press box is not shown on the original architectural or structural drawings, indicating that these floor framing members, their connections, and the decking that they support are additions to the stadium, not original construction.

Reference, Appendix C Page No(s):
94

Representative Photo(s):

Group 17 - Radial Trusses Supporting Orange Seats: Isolated corrosion at connections

CS4 Piece Count: 0
CS3 Piece Count: 1
Member(s): C329
Stand Module(s): SWSL, SESL
Nearest Plan Grid Intersection(s): 16 & A, 33 & C.1
Nearest Seating Section(s): HH & GG, J & H
Approximate Vertical Position(s): Field Level

Apparent Corrosion Accelerator:
Poor drainage at connections promotes corrosion.

Other Notes:
Drainage Improvements for E280 are anticipated in H&S5.

Reference, Appendix C Page No(s):
43

Representative Photo(s):

Group 18 - Raker Frame at Box Seats Level: Corrosion at Raker Plate Welded Connections

CS4 Piece Count: 0
CS3 Piece Count: 1
Member(s): B135
Stand Module(s): NESL
Nearest Plan Grid Intersection(s): 12 & E.7
Nearest Seating Section(s): LL
Approximate Vertical Position(s): Loge Seating Level

Apparent Corrosion Accelerator:
A water-retaining pocket is promoting corrosion.

Other Notes:

Reference, Appendix C Page No(s):
28

Representative Photo(s):

WJE ENGINEERS ARCHITECTS MATERIALS SCIENTISTS

APPENDIX B

WJE ASSESSMENT MEMOS

NOTE: This appendix is distributed electronically in report Volume 2.

APPENDIX C

ORIENTATION PLAN AND ELEVATION DRAWINGS NOTING LOCATIONS OF MEMBERS CLASSIFIED AS CONDITION STATE 3 OR 4

NOTE: This appendix is distributed electronically in report Volume 2.

APPENDIX D

TABULATION OF CORROSION SURVEY DATA

NOTE: This appendix is distributed electronically in report Volume 2.

NEW ALOHA STADIUM ENTERTAINMENT DISTRICT

PROGRAMMATIC DRAFT ENVIRONMENTAL IMPACT STATEMENT

WILSON OKAMOTO CORPORATION | CRAWFORD ARCHITECTS